4150 E 60th Avenue
Commerce City, CO

Traffic Impact Study

Prepared For:

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Section 1: Introduction

Purpose of Report

JR Engineering (JR) has completed a review of the traffic impacts of the proposed industrial development located at 4150 E 60th Avenue in Commerce City, CO. The purpose of this Traffic Impact Study (TIS) is to assess the short-term and long-term effects of the materials processing facility on both the local and regional transportation system.

Project Description

Site Description

The site at 4150 E 60th Avenue is located within a part of the southwest quadrant of Section 7, Township 3 South, Range 67 West of the 6th Principle Meridian, City of Commerce City, County of Adams, and State of Colorado. The area lies west of the interchange of I-270 and Vasquez Boulevard. The overall site is bounded by E 60th Avenue to the northeast, Sand Creek to the southwest, and the Union Pacific Railroad to the southeast. The vicinity map is shown in **Figure 1**.

The property encompasses approximately 16.9 acres. According to the Site Plan by Intergroup Architects, dated October 2021, the development is proposed to include a new materials processing facility with a footprint area of approximately 71,600 square feet. A recent site plan is attached in **Appendix D**. It should be noted that this site plan is not approved and subject to change. It is anticipated that construction on the property will start in Year 2022, with an anticipated buildout date in the Year 2024.

Existing Land Uses

Currently, 4150 E 60th Avenue contains several abandoned office and industrial buildings, as well as industrial debris remaining from the previous property owner. The debris and some of the existing buildings will be removed in order to construct a new materials processing facility. Existing office spaces and truck maintenance shops will be remodeled as needed by Waste Connections US.

The zoning for the site is I-3, which is planned Heavy Intensity Industrial per the City of Commerce City and no re-zoning is required with this development. Based on City criteria, a development plan permit is required prior to a building permit.

Study Area Boundaries

This study only focuses on the access into the site and the nearest major intersections, which include:

- Vasquez Boulevard & E 60th Avenue/Parkway Drive (E1)
- Brighton Boulevard & E 60th Avenue/Colorado Boulevard (E2)
- E 60th Avenue & Access 1 (A1)

- E 60th Avenue & Access 2 (A2)

Existing Roadway Network

All intersections within the study area boundary are located within the city limits of Commerce City. The main roadway systems to be utilized to access the parcels will be Vasquez Boulevard, Brighton Boulevard, and E 60th Avenue.

The existing lane geometry on Vasquez Boulevard (US 85/US 6) consists of the following and is under the purview of CDOT:

- Vasquez Boulevard runs north and south with a posted speed limit of 45 MPH in the vicinity of the site. The cross section currently consists of six through lanes and a raised median.
- Signalized intersection at E 60th Avenue/Parkway Drive located northeast of the project site. Parkway Drive is a fifth leg to the northeast. Frontage roads Dexter Street and Dahlia Street intersect E 60th Avenue as extensions of the intersection. Dexter Street is part of the complex signal phasing.

The existing lane geometry on Parkway Drive consists of the following:

- Parkway Drive runs northeast and southwest with a posted speed limit of 30 MPH in the vicinity of the site. The cross section currently consists of four through lanes and a striped median.

The existing lane geometry on Dexter Street consists of the following:

- Dexter Street runs north and south with no posted speed limit in the vicinity of the site, but assumed to be 30 MPH. The cross section currently consists of two through lanes with curb and gutter on the west side.

The existing lane geometry on Dahlia Street consists of the following:

- Dahlia Street runs north and south with a posted speed limit of 35 MPH in the vicinity of the site. The cross section currently consists of two through lanes and no median.

The existing lane geometry on E 60th Avenue consists of the following:

- East 60th Avenue generally runs east and west with a posted speed limit of 35 MPH in the vicinity of the site. The cross section currently consists of two through lanes and various turn lanes. The curb and gutter ends near the at-grade railroad crossing.

The existing lane geometry on Brighton Boulevard consists of the following:

- Brighton Boulevard runs northeast and southwest with a posted speed limit of 35 MPH in the vicinity of the site. The cross section currently consists of two through lanes without curb and gutter.
- Two-way stop controlled skewed intersection at E 60th Avenue/Colorado Boulevard approximately 1,500 feet to the northwest of the project site. The right turn is channelized from Brighton Boulevard to E 60th Avenue.

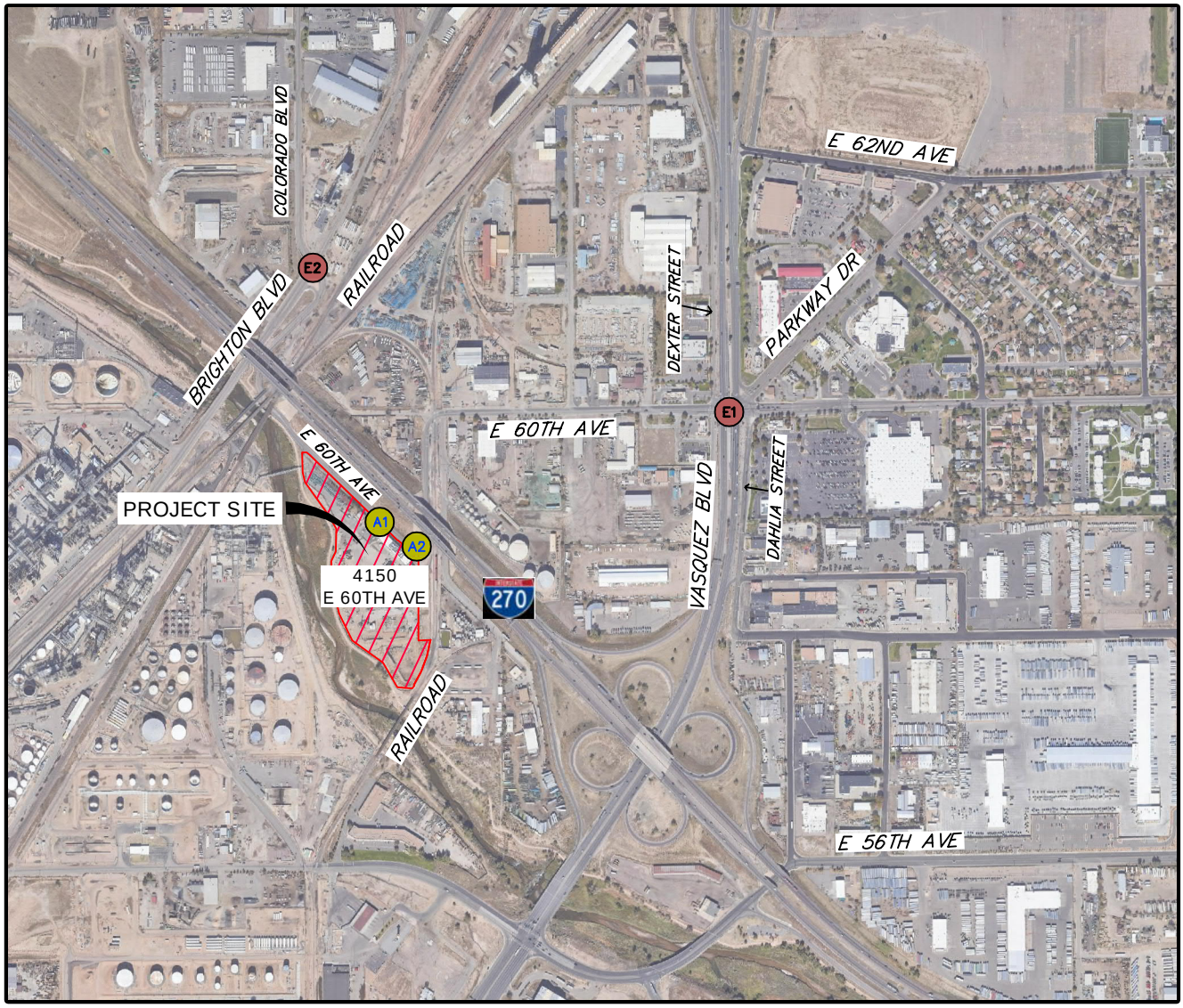


Figure 1 - Vicinity Map

LEGEND

X EXISTING INTERSECTION

X ACCESS INTERSECTION

PROJECT SITE

N

1000 500 0 1000

ORIGINAL SCALE: 1" = 1000'

Background Improvements

The Year 2021 existing conditions, Year 2024 opening day, and Year 2045 future conditions were evaluated in this study.

Outside of the improvements proposed with 4150 E 60th Avenue, CDOT has improvements planned in the area surrounding the intersection of Vasquez & 60th (E1), expected to be completed by the Year 2024. Improvements include restricted movements on Parkway Drive and Dexter Street, as well as a northbound-right turn lane on Vasquez Boulevard. The exhibit dated May 2022 by CDOT is included in **Appendix F**.

Additionally, based on the *Planning and Environmental Linkages (PEL) Study for Vasquez Boulevard* (dated August 2018 by CDOT), the intersection of Vasquez & 60th is expected to be improved again by the Year 2045. The PEL study evaluated 3 alternative packages to improve this complex 5-leg intersection that endangers motorists and pedestrians. No single alternative was identified as optimum, but rather a future National Environmental Policy Act (NEPA) document will need to further evaluate the three alternatives. Therefore, in this traffic study, the most cost-effective alternative was assumed to be built by the Year 2045: the At Grade Package. In this configuration, cul-de-sacs and redirects are proposed for Parkway Drive, Dexter Street, and Dahlia Street in order to converge with E 60th Avenue outside of the intersection with Vasquez Boulevard. The intersection of Vasquez Boulevard and E 60th Avenue becomes a standard 4-leg intersection and Vasquez Boulevard is widened to 8 lanes. The At-Grade Package figure from the PEL is included in **Appendix G**.

According to comments received from CDOT on November 18, 2021, there are no plans for any changes to the width or alignment of E 60th Avenue as part of the future I-270 reconstruction or any other project at this time.

The intersection of E 60th Avenue/Colorado Boulevard and Brighton Boulevard is anticipated to remain unchanged in the Year 2045, though improvements may be considered by the City of Commerce City. A preliminary signal warrant analysis is included in the results of this study.

Years 2024 and 2045 lane geometry are shown in **Figure 4** and **Figure 8**, respectively.

Site Access

Access to 4150 E 60th Avenue is proposed to remain in two locations, which connect into the northwest edge of the site along E 60th Avenue. Access A1 is approximately 350 feet northwest of the Union Pacific railroad and Access A2 is approximately 70 feet west of the railroad. It was assumed 90% of traffic will use Access A1 entering and exiting the site. There is also an existing railroad spur between access A2 and the railroad, which will be utilized with the materials processing facility, but does not affect traffic volumes.

Section 2: Existing and Projected Traffic Volumes

Data Collection

Existing turning movement counts were collected by All Traffic Data on August 24, 2021 at the following study area intersections:

- Vasquez Boulevard & E 60th Avenue/Parkway Drive (E1)
    - also includes the adjacent Dexter Street and Dahlia Street
- Brighton Boulevard and E 60th Avenue (E2)

The counts were collected from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, with the AM and PM peak hours generally occurring within 7:15 to 8:15 AM and 4:15 to 5:15 PM, respectively.

Additionally, 24-hour tube counts were collected along E 60th Avenue just west of the site on December 2, 2021. The counts were used to estimate the average daily traffic (ADT) as 4,350 vehicles.

Annual Average Daily Traffic (AADT) along Vasquez Boulevard could be found on CDOT Online Transportation Information System (OTIS). Year 2020 Average Annual Daily Traffic (AADT) south of E 60th Avenue was 42,000 vehicles and Year 2020 AADT north of E 60th Avenue was 36,000 vehicles. The approximate truck percentage is 4%.

However, based on the August 2021 traffic counts, the truck percentage through the intersection of Vasquez & 60th (E1) is approximately 7% in the AM peak hour and 3% in the PM peak hour. The truck percentage through the intersection of Brighton & 60th (E2) is approximately 4% in the AM peak hour and 6% in the PM peak hour.

Since the existing site is not in use, it was assumed there is no traffic entering or exiting the site in the Year 2021 condition. It is apparent no heavy trucks currently pass by the site, since there is a bridge with 9-foot vertical clearance to the northwest along E 60th Avenue and no accesses in between; all truck traffic must travel to/from Vasquez Boulevard and not Brighton Boulevard. According to the tube counts along E 60th Avenue, there were a total of 5 and 6 trucks eastbound and westbound, respectively, with 3 axles or double axles. It may be assumed that these are low-clearance medium vehicles.

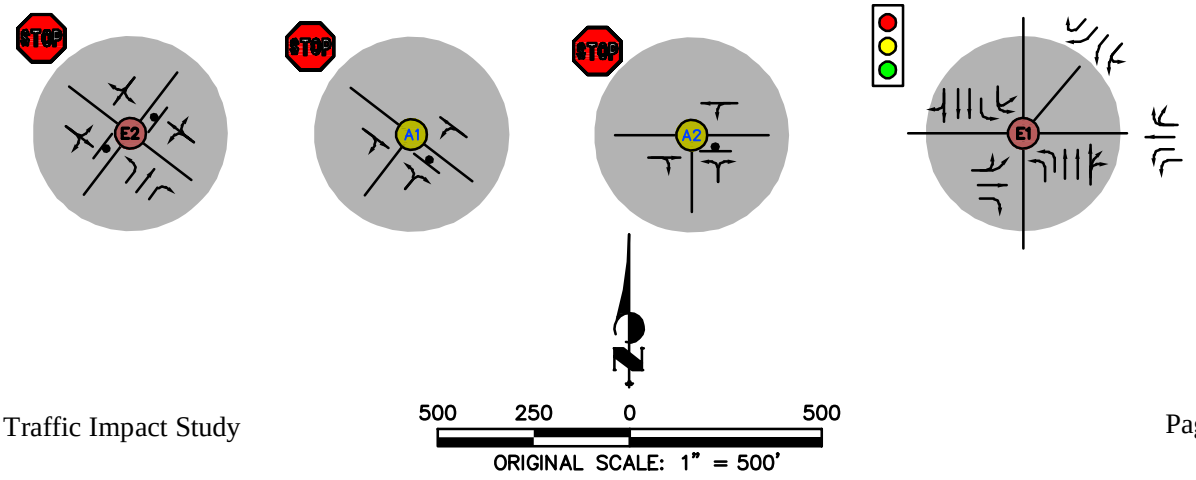
The existing signal timing for the intersection of Vasquez Boulevard & E 60th Avenue (E1) was obtained from CDOT on September 28, 2021. The signal phasing was also observed in the field to verify phasing on October 21, 2021.

Year 2021 lane geometry and peak hour counts are shown in **Figure 2** and **Figure 3**, respectively. The traffic counts and signal timing data are included in **Appendix A**.

LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

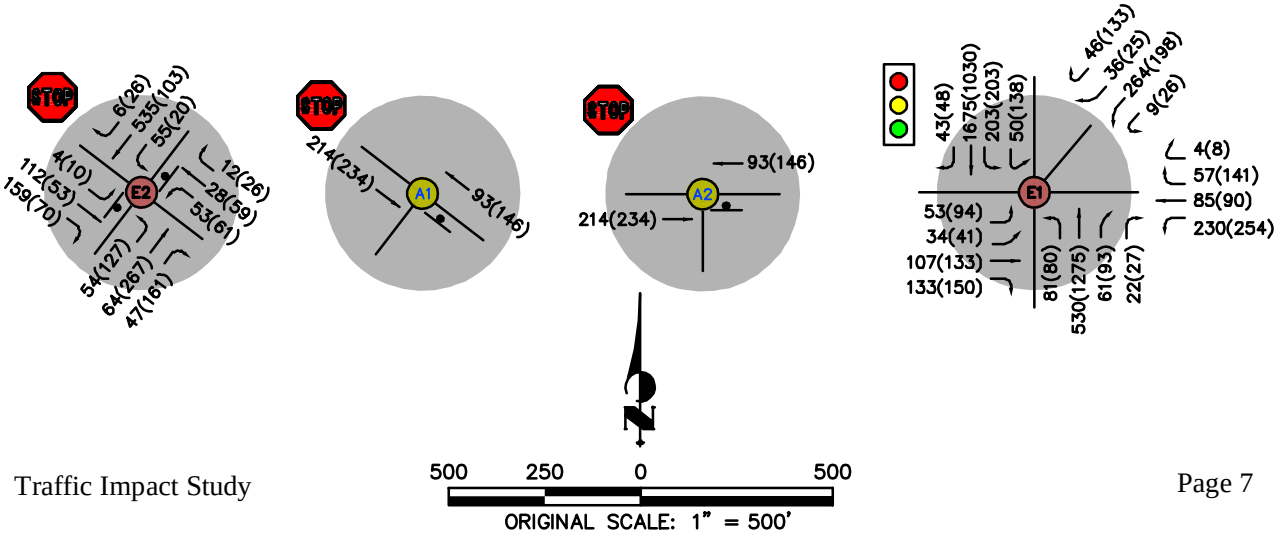
Figure 2 - Year 2021
Lane Geometry



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

Figure 3 - Year 2021
Existing Traffic



Background Traffic

Projections for Years 2024 and 2045 peak hour traffic volumes have been calculated for the adjacent roadway system in order to have a basis for future traffic impacts. Using both CDOT OTIS and the Denver Regional Council of Governments (DRCOG) public data/modeling between Years 2020 and 2050, the approximate growth rate for Vasquez Boulevard is 0.7%. Therefore, a rounded growth rate of 1.0% was applied to all volumes in the vicinity of the site.

Additionally, background traffic was added from the *Mile High Greyhound Park (MHGP) Redevelopment TIS*, prepared by Kimley-Horn and approved in February 2020. This development is expected to be built by the Year 2024. The site generated traffic at Vasquez & 60th is included in **Appendix E**. However, the southwest-bound left movement will be restricted by the Year 2024 per CDOT's short term improvements. The southwest-bound left volume was rerouted as southbound-thru and west-bound left volume.

Background traffic volumes for Years 2024 and 2045 are shown in **Figure 5** and **Figure 9**, respectively.

Site Generated Traffic

Trip Generation

Trip generation has been calculated from the latest data contained within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual: 10th Edition Volume 1, 2017*. Based on the land use and the guidelines within the *Trip Generation Manual*, JR used the fitted curve equations for the weekday AM peak hour of adjacent street traffic, weekday PM peak hour of adjacent street traffic, and weekday average daily traffic (ADT).

Based on the site plan for 4150 E 60th Avenue as a materials processing facility, the parcel was studied as General Light Industrial (Code No. 110) with 50 employees and General Office Building (Code No. 710) with another 50 employees.

The development at 4150 E 60th Avenue is expected to generate:

- 452 weekday trips
- 54 AM peak hour vehicle trips, split 83% entering and 17% exiting
- 60 PM peak hour vehicle trips, split 21% entering and 79% exiting

Table 1 shows a summary of land use, trip generation rates, and total external vehicle trips generated. No adjustments were made for internal site trips and pass-by trips. The detailed land use reports are included in **Appendix B**.

Project Trip Distribution

An important element in the determination of the proposed project's traffic impact is the directional distribution of its traffic onto the surrounding roadway system. The relative location of the site, the type of land use, and specific characteristics of the roadway and

access system dictate this distribution of traffic. Note that in this analysis, the distribution was based on the approximate directional distribution of the traffic counts obtained on August 24, 2021.

The distribution of the site generated traffic will be oriented as follows:

- 5 percent to the north along Colorado Boulevard
- 7 percent to the north along Brighton Boulevard
- 10 percent to the west along Brighton Boulevard
- 5 percent to the northeast along Parkway Drive
- 10 percent to the east along E 60th Avenue
- 30 percent to the north along Vasquez Boulevard
- 33 percent to the south along Vasquez Boulevard

It should be noted that all trucks entering/exiting the site will need to drive to/from Vasquez Boulevard to the east; the existing railroad bridge to the west only has nine feet of vertical clearance above the roadway. Waste Connections has estimated a maximum of 85 trucks per day using their site in operation. With an estimated total ADT of 452 vehicles generated by the site, the approximate truck percentage is 20% each day. However, more employees with passenger cars are expected to enter and exit during the morning and evening, while trucks for recycling purposes are expected to enter and exit during business hours. Thus, 6% was used during the AM and PM peak hours. All truck percentages are accounted for within the Synchro heavy vehicle percentage, which converts trucks to passenger car equivalents.

Thus, the development at 4150 E 60th Avenue is expected to generate the following number of trucks:

- 85 weekday truck trips
- 3 AM peak hour truck trips, split 2 entering and 1 exiting
- 4 PM peak hour truck trips, split 1 entering and 3 exiting

These volumes do not significantly affect the heavy vehicle percentages during the peak hours at the intersection of Vasquez & 60th (E1); the existing heavy vehicle percentages were maintained in the Year 2024 opening day condition.

The tube counts collected on December 2, 2021 provide an estimation of 4,350 ADT along E 60th Avenue near the site. According to *Commerce City Construction Standards and Specifications* section 3.02, a minor collector may "handle traffic volumes generally less than 7,000 vehicles per day". Therefore, JR recommends E 60th Avenue to remain a two-lane road and widening is not necessary.

The assignment of site generated traffic and directional distribution are shown in **Figure 6**.

Table 1 - Trip Generation Summary

Alternative: Materials Processing Facility
Phase:
Project: 4150 E 60th Avenue

Open Date: 9/17/2021
Analysis Date: 9/17/2024

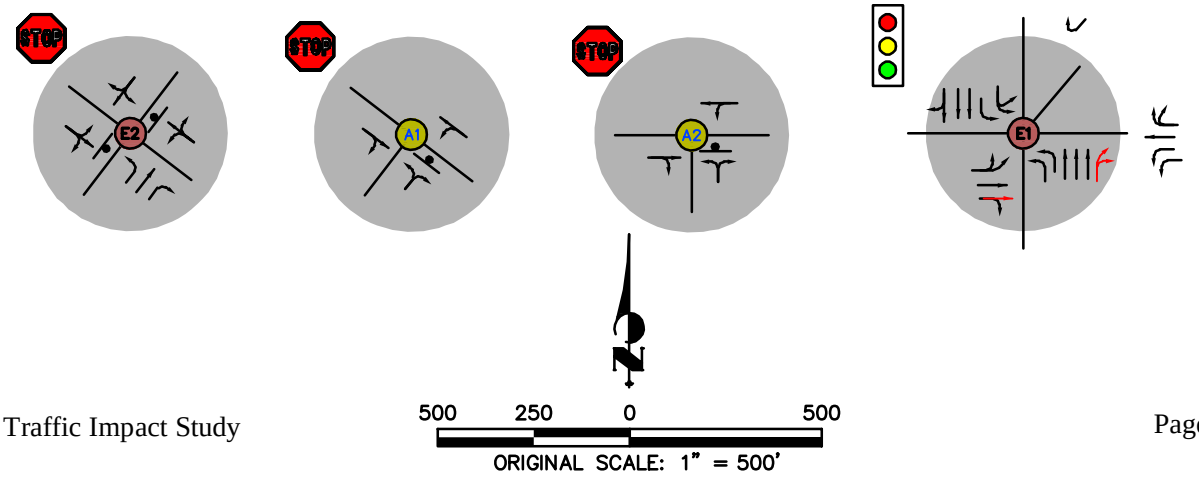
ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
110	Materials Processing Facility			86	85	171		21	4	25		5	18	23
	50	Employees												
710	Office Building			141	140	281		24	5	29		7	30	37
	50	Employees												
Unadjusted Volume				227	225	452		45	9	54		12	48	60
Internal Capture Trips				0	0	0		0	0	0		0	0	0
Pass-By Trips				0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets				227	225	452		45	9	54		12	48	60

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

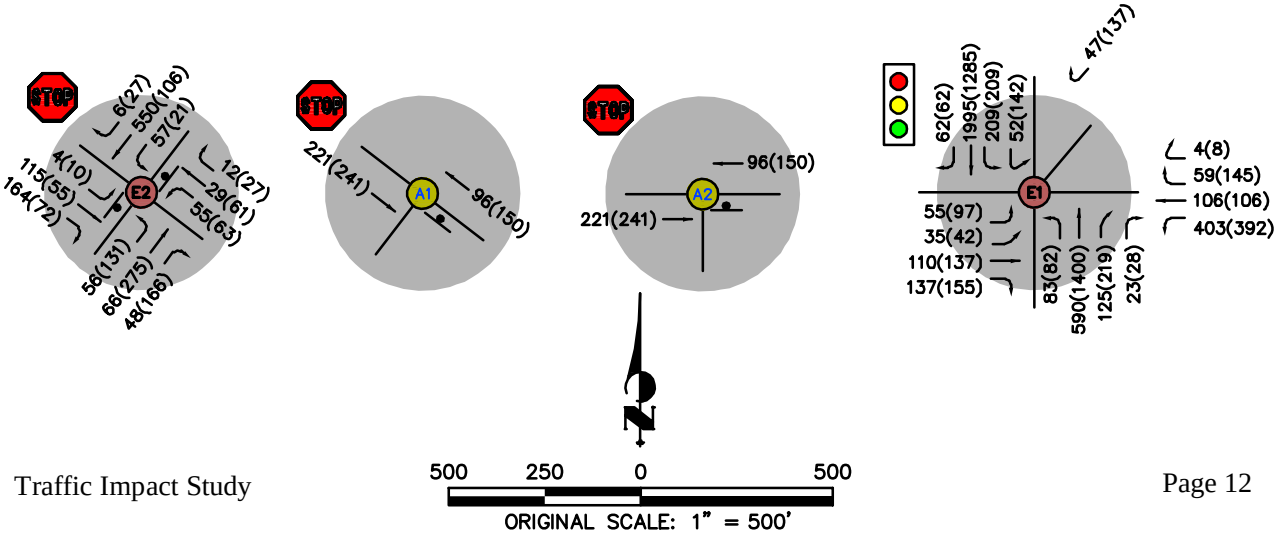
Figure 4 - Year 2024
Lane Geometry



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

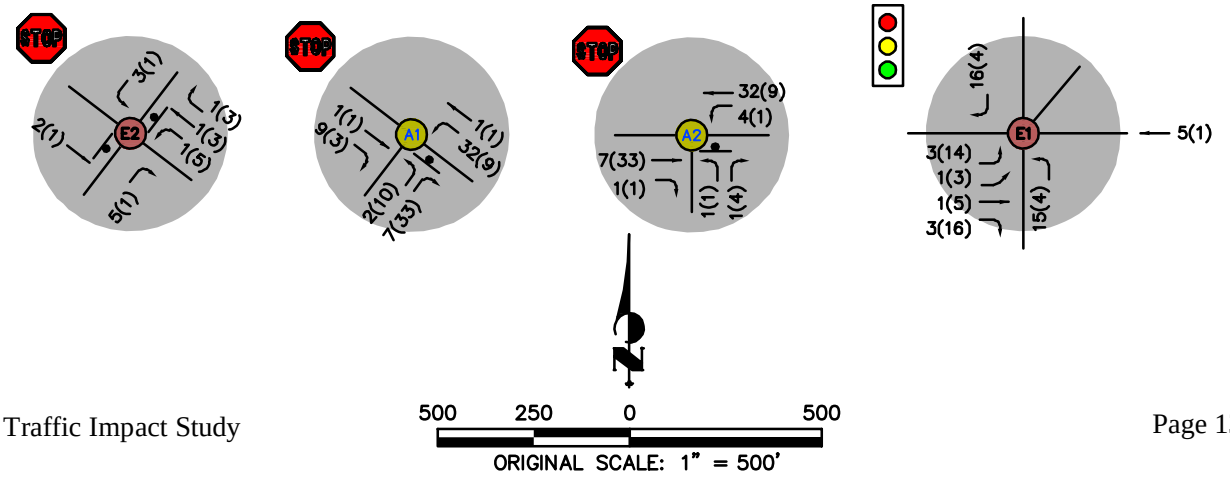
Figure 5 - Year 2024 Background Traffic



LEGEND

- EXISTING INTERSECTION
- ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- XX% DISTRIBUTION OF SITE GENERATED TRAFFIC

Figure 6 - Year 2024
Assignment of Site Generated Traffic



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

Figure 7 - Year 2024 Opening Day Traffic

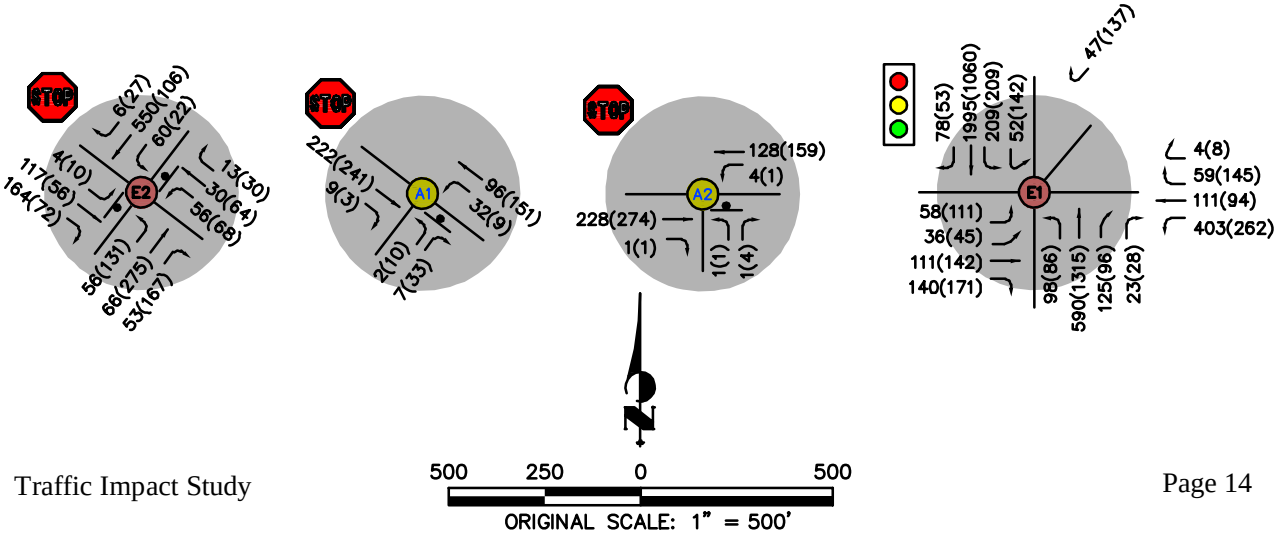
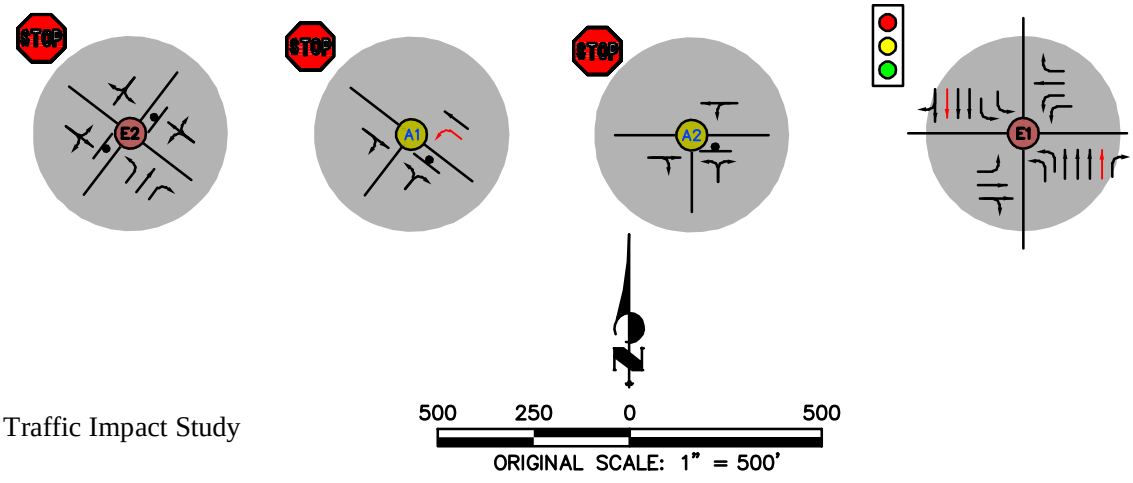


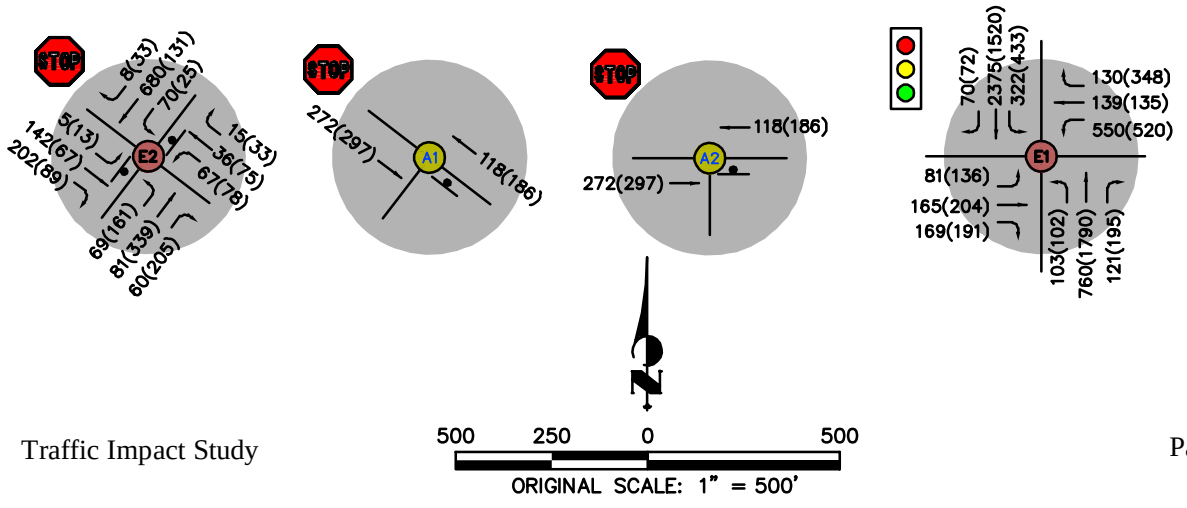
Figure 8 - Year 2045
Lane Geometry



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

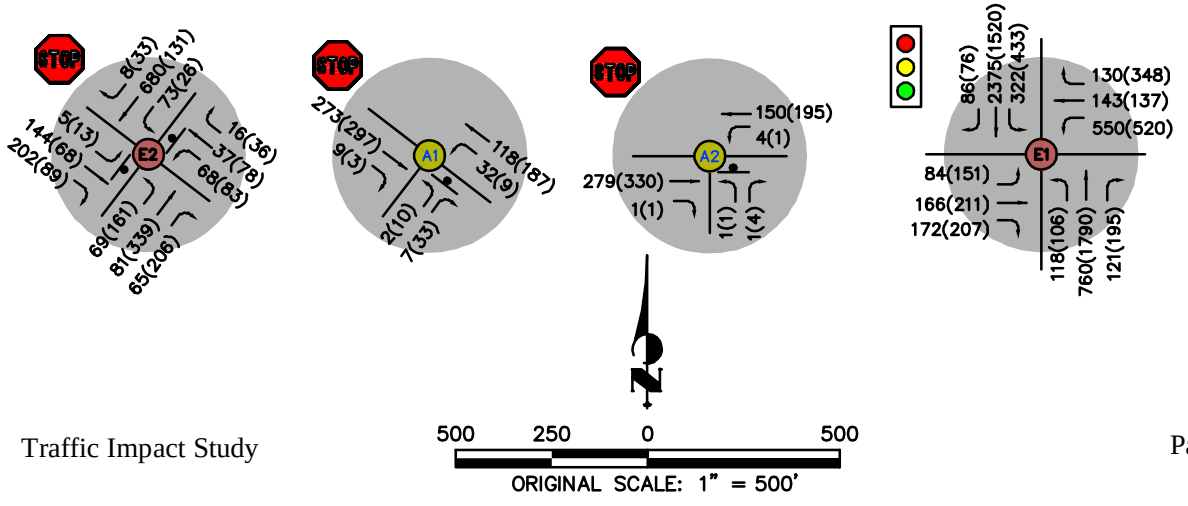
Figure 9 - Year 2045 Background Traffic



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

Figure 10 - Year 2045
Total Traffic



Section 3: Traffic Operations and Project Impacts

Level of Service

The capacity of an intersection is measured by how well it operates during the peak hours of the day. Intersection capacities are expressed in terms of levels of service (LOS). LOS is a qualitative measure of intersection functionality, which is based on average delay experienced at an intersection. LOS ratings range from LOS A (best – free flow conditions) to LOS F (worst – unstable flow or high vehicle delay).

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometry, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the volume to capacity (v/c) ratio for the lane group.

The *Highway Capacity Manual (HCM) 6th Edition* LOS thresholds for lane groups take into account the volume-to-capacity (v/c) ratio, in addition to control delay, such that any value above 1.0 would denote LOS 'F' regardless of the corresponding value of control delay. Values for approach and overall intersection LOS are still based on just control delay. **Table 2** lists the LOS thresholds for the automobile mode at a signalized intersection:

Table 2 – Signalized Intersection (Auto Mode) LOS Thresholds

Control Delay (Seconds per Vehicle)	Level of Service (v/c Ratio)	
	<= 1.0	> 1.0
<=10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Level of service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. LOS is not defined for the intersection as a whole or for major-street approaches for three primary reasons:

a) Major-street through vehicles are assumed to experience zero delay

b) The disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average for all movements, resulting in a very low overall average delay for all vehicles
c) The resulting low delay can mask important LOS deficiencies for minor movements

The LOS criteria for TWSC intersections are somewhat different from the criteria used for signalized intersections, primarily because user perceptions differ among transportation facility types. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals, which can reduce user's delay tolerance.[1]

As with signalized intersections, LOS F is assigned to the movement if the v/c ratio for the movement exceeds 1.0, regardless of the control delay. **Table 3** lists the LOS thresholds for the automobile mode at a TWSC intersection.

Table 3 – TWSC Intersection (Auto Mode) LOS Thresholds

Control Delay (Seconds per Vehicle)	Level of Service (v/c Ratio)	
	<= 1.0	> 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Analysis of Existing Conditions

Traffic analysis of the existing conditions was performed using the *HCM 6th Edition* discussed above. Utilizing the existing traffic volumes, the operation of the study intersections were analyzed using the Synchro software. Input data for creating the Synchro network included intersection geometry (number of travel lanes, turning lanes, and lengths of storage bays), traffic control mitigation (speed limits and stop signs), vehicular traffic volumes, and heavy vehicle percentages. Operational analyses were conducted in the AM and PM peak hours to determine the levels of service.

The existing signal timing obtained from CDOT was used for the intersection of Vasquez Boulevard & E 60th Avenue (E1). The signal phasing was observed in the field that there are 9th and 10th phases for movements from Parkway Drive and from Dexter Street. In Synchro, a 9th phase was added for Parkway Drive, but extra red time was added to phases 2 and 5 in order to mimic the subsequent phase for Dexter Street. Furthermore, the

[1] Highway Capacity Manual 2010, Transportation Research Board, 2010

volumes from Dexter Street and Dahlia Street were assigned to 60th Avenue in order to include them in the model. The existing volumes were input and the LOS results are summarized in **Table 4**. The detailed LOS reports are included in **Appendix C**. The existing signal timing data is included in **Appendix A**.

It should be noted that neither *HCM 6th Edition* nor *HCM 2010* support more than 4 approaches to an intersection. Thus, *HCM 2000* was used to analyze the 5-leg intersection at Vasquez & 60th (E1).

Table 4 – LOS for Year 2021 Existing Traffic

Signalized Intersection	Movement	Existing Traffic LOS	
		AM Peak Hour	PM Peak Hour
E1 - Vasquez Boulevard & E 60th Avenue/Parkway Drive	EBL	F	F
	EBT	F	F
	EBR	D	E
	WBL	F	F
	WBT	E	F
	WBR	D	E
	NBL	E	E
	NBTR	D	E
	SBL1	E	F
	SBL2	D	E
	SBTR	F	D
	SWBL1	F	F
	SWBL2	D	E
	SWBR	D	E
	Overall	**F**	**F**
TWSC Intersection			
E2 - Brighton Boulevard & E 60th Avenue/ Colorado Boulevard	SEBLTR	F	C
	NWBLTR	F	F
	NEBL	A	A
	SWBLTR	A	A

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, SEB=Southeast-Bound, NWB=Northwest-Bound, NEB-Northeast-Bound, SWB=Southwest-Bound
2. L=Left, R=Right, T=Through
3. Yellow highlight exceeds Established Threshold of LOS D

As shown in **Table 4**, many movements are not operating at acceptable levels of service in the Year 2021 existing conditions.

Regarding the intersection of Vasquez & 60th (E1), this is consistent with the *PEL Study for Vasquez Boulevard* and why the PEL recommends alternatives for improving the intersection. The major improvements are expected to occur by CDOT by the Year 2045.

Regarding the intersection of Brighton & 60th (E2), the vacant site at 4150 E 60th Avenue does not cause to these failures. Therefore, Waste Connections should not be responsible for potential intersection improvements.

Analysis of Year 2024

Traffic analysis of the Year 2024 was also performed using Synchro and the *HCM 6th Edition/HCM 2000*. As stated previously, short term improvements include restricted movements from Parkway Drive and Dexter Street. The volumes approaching from Parkway Drive were rerouted through Vasquez and 60th. The signal timing was adjusted as well. The projected traffic volumes were input and the LOS results are summarized in **Table 5**. The LOS reports are included in **Appendix C**.

Table 5 – LOS for Year 2024 Traffic

Signalized Intersection	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - Vasquez Boulevard & E 60th Avenue/Parkway Drive	EBL	E	D	E	D
	EBTR	E	D	E	D
	WBL	F	E	F	E
	WBT	D	D	D	D
	WBR	D	D	D	D
	NBL	D	C	D	C
	NBT	C	C	C	C
	NBR	C	C	C	C
	SBL1	E	E	E	E
	SBL2	D	D	D	D
	SBTR	D	C	D	C
	SWBTR	B	B	B	B
	Overall	**D**	**D**	**D**	**D**
	Delay (sec)	**43.9**	**36.6**	**44.7 (+1.8%)**	**37.1 (+1.4%)**
TWSC Intersection					
E2 - Brighton Boulevard & E 60th Avenue/ Colorado Boulevard	SEBLTR	F	C	F	C
	NWBLTR	F	F	F	F
	NEBL	A	A	A	A
	SWBLTR	A	A	A	A
A1 - 60th Avenue & Access 1	NWBLT	N/A	N/A	A	A
	NEBLR	N/A	N/A	B	B
A2 - 60th Avenue & Access 2	WBLT	N/A	N/A	A	A
	NBLR	N/A	N/A	B	B

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, SEB=Southeast-Bound, NWB=Northwest-Bound, NEB-Northeast-Bound, SWB=Southwest-Bound
2. N/A=Not Applicable
3. L=Left, R=Right, T=Through
4. Yellow highlight exceeds Established Threshold of LOS D

As shown in **Table 5**, most movements are expected to operate at acceptable levels of service in the Year 2024 Background Traffic and Opening Day Traffic scenarios. This was expected at Vasquez & 60th (E1) with roadway improvements at the intersection. If these CDOT roadway improvements do not occur by Year 2024, then the LOS would have similar failures to the Year 2021 existing condition, which are not caused by site generated traffic.

JR recommends that the City accept the failing LOS at Vasquez & 60th (E1) because these failures occur in the background traffic; no failures occur due to the site generated traffic. Furthermore, a variance letter was submitted to the City on December 14, 2022 to approve the failing levels of service at this intersection.

JR recommends that the City also accept the failing LOS at intersection E2 because the failures occur in the background traffic, due to high volumes along Brighton Boulevard as a 2-lane road. Additionally, the queue lengths may be as follows:

- SEBLTR movement in the AM peak hour: the 95th percentile queue length is 323 feet and is may only impede one upstream industrial driveway along Colorado Boulevard.
- NWBLTR movement in the AM and PM peak hours: the 95th percentile queue lengths are 301 feet and 199 feet, respectively, and are not expected to impede any upstream driveways along 60th Avenue.

A variance letter was also submitted to the City on December 14, 2022 to approve the failing levels of service at this intersection.

Because the northwest-bound left turn volume at access A1 is 32 vehicles per hour (vph) in the AM peak hour, a left turn lane is warranted into the site. East 60th Avenue is classified as a frontage road per CDOT and a left turn lane is required for 25 vph and above. A right turn lane into the site is not required.

Analysis of Year 2045

Traffic analysis of the Year 2045 was performed using Synchro and the *HCM 6th Edition*.

The following improvements are expected to be complete by the Year 2045 and were reflected in the Year 2045 Background and Total analyses:

- As described previously, the intersection of Vasquez Boulevard & E 60th Avenue (E1) is expected to be reconstructed to be a typical 4-leg intersection. Parkway Drive, Dexter Street, and Dahlia Street would be rerouted away from the intersection.
- Vasquez Boulevard is shown to be widened to 8 lanes, along with the same turn lanes as Year 2024.
- The traffic signal timing was modified to a standard 8 phases and optimized.

The lane geometry and projected traffic volumes were input, and the LOS results are summarized in **Table 6**. The detailed LOS reports are included in **Appendix C**. The At-Grade Package figure from the Vasquez Boulevard PEL is included in **Appendix E**.

Table 6 – LOS for Year 2045 Traffic

Signalized Intersection	Movement	Background Traffic LOS		Total Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - Vasquez Boulevard & E 60th Avenue	EBL	D	C	D	C
	EBTR	D	D	D	D
	WBL	D	D	D	D
	WBT	D	D	D	D
	WBR	A	A	A	A
	NBL	D	D	D	D
	NBT	C	D	C	D
	NBR	C	C	C	C
	SBL	D	D	D	D
	SBTR	D	C	D	C
	Overall	**D**	**D**	**D**	**D**
TWSC Intersection					
E2 - Brighton Boulevard & E 60th Avenue/ Colorado Boulevard	SEBLTR	F	E	F	E
	NWBLTR	ERROR	F	ERROR	F
	NEBL	A	A	A	A
	SWBLTR	A	A	A	A
A1 - 60th Avenue & Access 1	NWBLT	N/A	N/A	A	A
	NEBLR	N/A	N/A	B	B
A2 - 60th Avenue & Access 2	WBLT	N/A	N/A	A	A
	NBLR	N/A	N/A	B	B

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, SEB=Southeast-Bound, NWB=Northwest-Bound, NEB=Northeast-Bound, SWB=Southwest-Bound
2. N/A=Not Applicable
3. L=Left, R=Right, T=Through
4. Yellow highlight exceeds Established Threshold of LOS D

As shown in **Table 6**, most movements are expected to operate at acceptable levels of service in the Year 2045 Background Traffic and Total Traffic. As anticipated, the intersection of Vasquez & 60th (E1) would greatly improve with reconstruction from a 5-leg intersection to a 4-leg intersection.

JR recommends that the City consider improvements to the intersection of Brighton & 60th (E2) by the Year 2045 in order to mitigate the failing southeast and northwest movements. As shown in **Table 6**, Synchro results in failures for the southeast approach and errors for the northwest approach in the AM peak hour because the volume/capacity ratio and delays are too high. This is due to the relatively high volume of traffic on Brighton Boulevard for a 2 lane road. Improvements may include widening Brighton Boulevard to 4 lanes and/or installing additional turn lanes. Furthermore, a variance letter

was submitted to the City on December 14, 2022 to approve the failing levels of service at this intersection.

It seems a significant amount of traffic uses Brighton Boulevard as a bypass to and from the River North district of Denver, particularly southbound in the AM peak hour. Based on the *PEL Study for Vasquez Boulevard*, once improvements are made to Vasquez Boulevard in this vicinity, less traffic may use Brighton Boulevard and utilize Vasquez Boulevard instead.

Preliminary Signal Warrant Analysis

A peak-hour signal warrant analysis was done for the intersection of Brighton Boulevard & E 60th Avenue (E2). The minimum volumes for Warrant #3 – Peak Hour Condition B are based on MUTCD Figures 4C-3 or 4C-4, depending on the speed limit. The thresholds are based on the major street total of both approaches and the minor street higher-volume approach. Based on engineering judgment per MUTCD section 4C.01, half of the right turn volumes were excluded from the minor street approach. The AM peak hour was used because it consists of higher volumes.

At Brighton & 60th, the peak hour volume thresholds are based on MUTCD Figure 4C-3 because Brighton Boulevard (the major street) has a posted speed limit of 35 mph. In the Year 2024 AM peak hour, the major street total is expected to be 791 and the minor street higher-volume is expected to be 200. Since the peak hour volumes are not expected to exceed the minimum thresholds in the Year 2024, the Condition B warrant is not expected to be satisfied.

In the Year 2045 AM peak hour, the major street total is expected to be 976 and the minor street higher-volume is expected to be 250. Since the peak hour volumes are expected to exceed the minimum thresholds in the Year 2045, the Condition B warrant is expected to be satisfied.

Truck Turns and Signage

Trucks turning along E 60th Avenue were analyzed using the AutoTurn CAD program with a WB-67 semi-trailer truck. As shown in Figure 11, trucks are able to maneuver all corners along E 60th Avenue and into the site, but are expected to impede the oncoming travel lane. Recommendations for sight distance and low bridge warnings include the following:

- Verify the sight distance for yielding to oncoming trucks at the two corners along E 60th Avenue. The sight distance is more limited at the corner south of I-270. Therefore, “Limited Sight Distance” W14-4 signage is proposed approaching the southern corner.
- The existing “Low Bridge Ahead” W16-9P plaque is proposed to be relocated and replaced with a “Low Bridge 0.25 Mile Ahead” W16-2P plaque in order to avoid confusion with the underpass below I-270.
- The remaining “Low Bridge” warnings are adequate to notify truck drivers unfamiliar with the area.

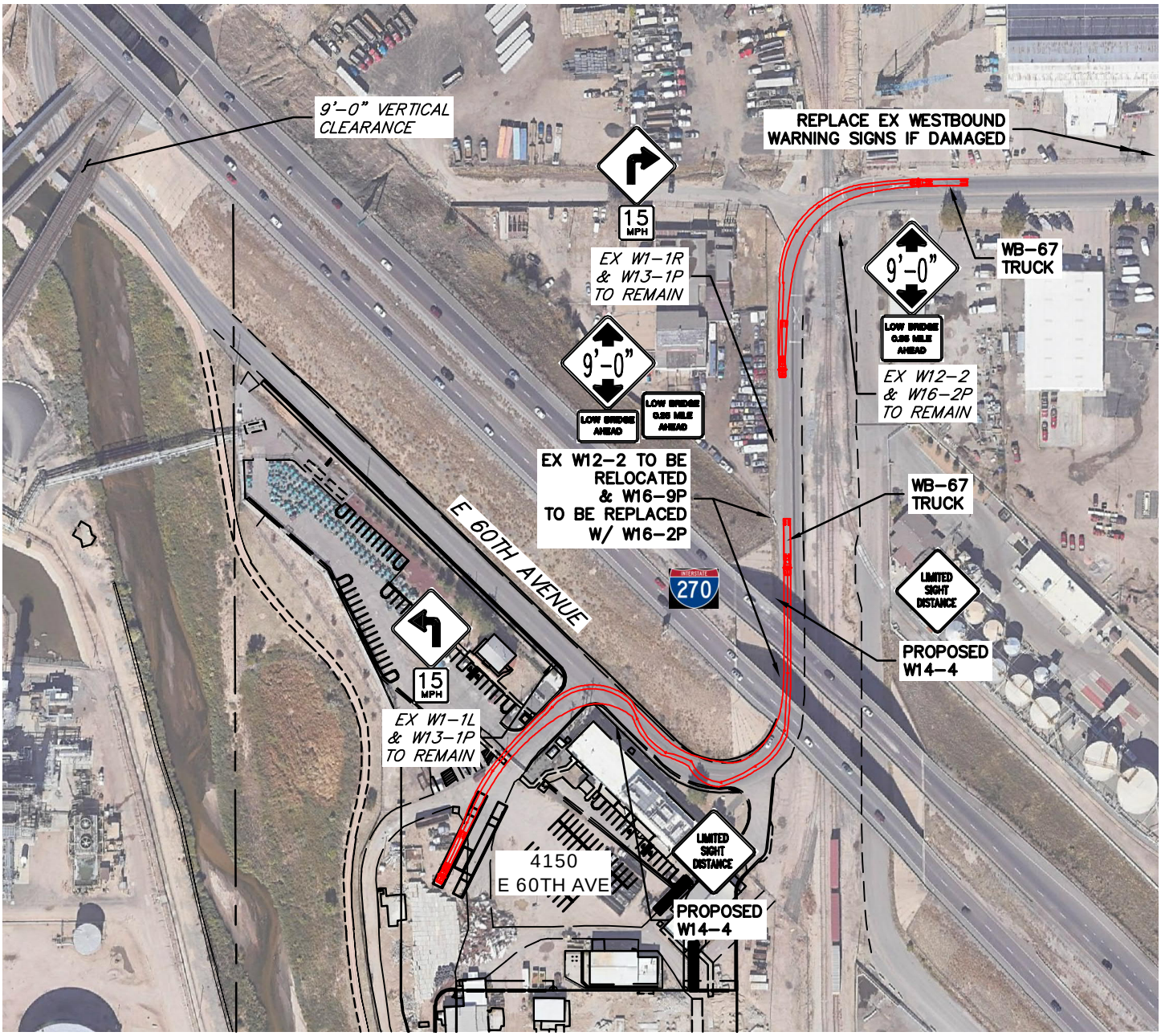


Figure 11 - E 60th Avenue
Truck Turns and Signage

Section 4: Conclusion

Based on the analyses presented herein, the following conclusions and recommendations are made with respect to the materials processing facility at 4150 E 60th Avenue in Commerce City, Colorado.

Trip Generation, Distribution and Assignment

Trip generation was calculated from the latest data contained within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual: 10th Edition Volume 1*.

In summary, the materials processing facility is expected to generate 452 weekday trips, including 54 AM peak hour trips and 60 PM peak hour trips.

The distribution of the site generated traffic was oriented as follows:

- 5 percent to the north along Colorado Boulevard
- 7 percent to the north along Brighton Boulevard
- 10 percent to the west along Brighton Boulevard
- 5 percent to the northeast along Parkway Drive
- 10 percent to the east along E 60th Avenue
- 30 percent to the north along Vasquez Boulevard
- 33 percent to the south along Vasquez Boulevard

Traffic Operations and Recommendations

Traffic analyses of Year 2021, Year 2024, and Year 2045 conditions were performed using the *HCM 6th Edition* and *HCM 2000* methodologies within the Synchro software.

Year 2021 Existing Conditions

As shown in **Table 4**, many movements are not operating at acceptable levels of service in Year 2021. In order to mitigate, the intersection of Vasquez & 60th (E1) is expected to be improved by CDOT by the Year 2024 and reconstructed to a 4-leg intersection by the Year 2045.

Regarding the intersection of Brighton & 60th (E2), the vacant site at 4150 E 60th Avenue does not cause these failures. Therefore, Waste Connections should not be responsible for potential intersection improvements.

Year 2024 Opening Day

As shown in **Table 5**, most movements are expected to operate at acceptable levels of service in the Year 2024 Background Traffic and Opening Day Traffic scenarios.

JR recommends that the City accept the failing LOS at Vasquez & 60th (E1) because these failures occur in the background traffic; no failures occur due to the site generated traffic.

JR recommends that the City also accept the failing LOS at Brighton & 60th because these failures occur in the background traffic. Additionally, the 95th percentile queue length in the AM peak hour may only impede one upstream industrial driveway along Colorado Boulevard.

JR does not recommend widening E 60th Avenue to four lanes near the site because it is classified as a minor collector per Commerce City and ADT is estimated below 7,000 vehicles. Additionally, CDOT classifies E 60th Avenue as a frontage road and does not have plans to widen E 60th Avenue as a part of any projects in the area. However, E 60th Avenue will need to be widened in order to install a left turn lane into the site at access A1. The volume is above the threshold of 25 vph for a frontage road per CDOT guidance. A right turn lane into the site is not required.

Year 2045 Future

As shown in **Table 6**, most movements are expected to operate at acceptable levels of service in the Year 2045 Background Traffic and Total Traffic.

As anticipated, the intersection of Vasquez & 60th (E1) would greatly improve due to the reconstruction from a 5-leg intersection to a 4-leg intersection. No failures occur in this condition.

JR recommends that the City consider improvements to the intersection of Brighton & 60th (E2) by the Year 2045 in order to mitigate the failing southeast and northwest movements. Improvements may include the installation of additional turn lanes and/or widening Brighton Boulevard to 4 lanes. Furthermore, a traffic signal is not expected to meet the peak hour volume warrant by the Year 2024, but is expected to meet the peak hour volume warrant by the Year 2045.

Finally, design variance letters were submitted to the City of Commerce City on December 14, 2022 for the failing LOS at Vasquez & 60th (E1) and Brighton & 60th (E2) in Year 2024, as well as Brighton & 60th (E2) in Year 2045.

JR Engineering trusts that this report will assist with planning for the proposed materials processing facility at 4150 E 60th Avenue in Commerce City, Colorado.

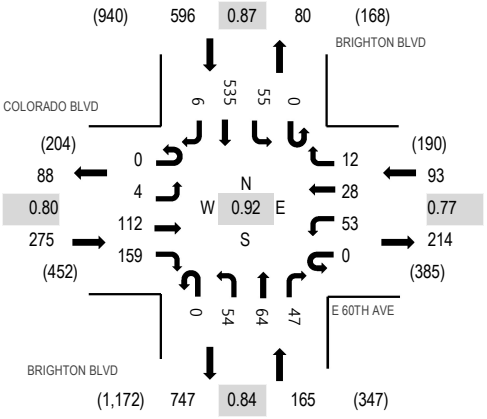
Appendix A

Traffic Counts and Signal Timing

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

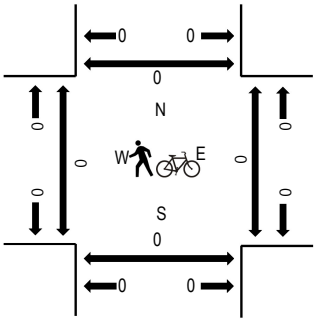
Location: 1 BRIGHTON BLVD & E 60TH AVE AM
Date: Tuesday, August 24, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	COLORADO BLVD Eastbound				E 60TH AVE Westbound				BRIGHTON BLVD Northbound				BRIGHTON BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	28	34	0	11	8	1	0	7	16	13	0	12	125	1	258	1,129	0	0	0	0
7:15 AM	0	0	24	31	0	12	11	4	0	15	18	10	0	11	146	3	285	1,098	0	0	0	0
7:30 AM	0	0	24	46	0	11	4	3	0	19	17	11	0	15	155	1	306	1,014	0	0	0	0
7:45 AM	0	2	36	48	0	19	5	4	0	13	13	13	0	17	109	1	280	895	0	0	0	0
8:00 AM	0	1	28	33	0	18	11	6	0	14	17	9	0	11	77	2	227	800	0	0	0	0
8:15 AM	0	2	15	25	0	6	6	5	0	16	13	15	0	18	75	5	201		0	0	0	0
8:30 AM	0	0	20	19	0	11	9	4	0	16	24	14	0	4	64	2	187		0	0	0	0
8:45 AM	0	4	13	17	0	11	10	0	0	22	12	10	0	14	69	3	185		0	0	0	0
Count Total	0	11	188	253	0	99	64	27	0	122	130	95	0	102	820	18	1,929		0	0	0	0
Peak Hour	0	4	112	159	0	53	28	12	0	54	64	47	0	55	535	6	1,129		0	0	0	0

ALL TRAFFIC DATA SERVICES
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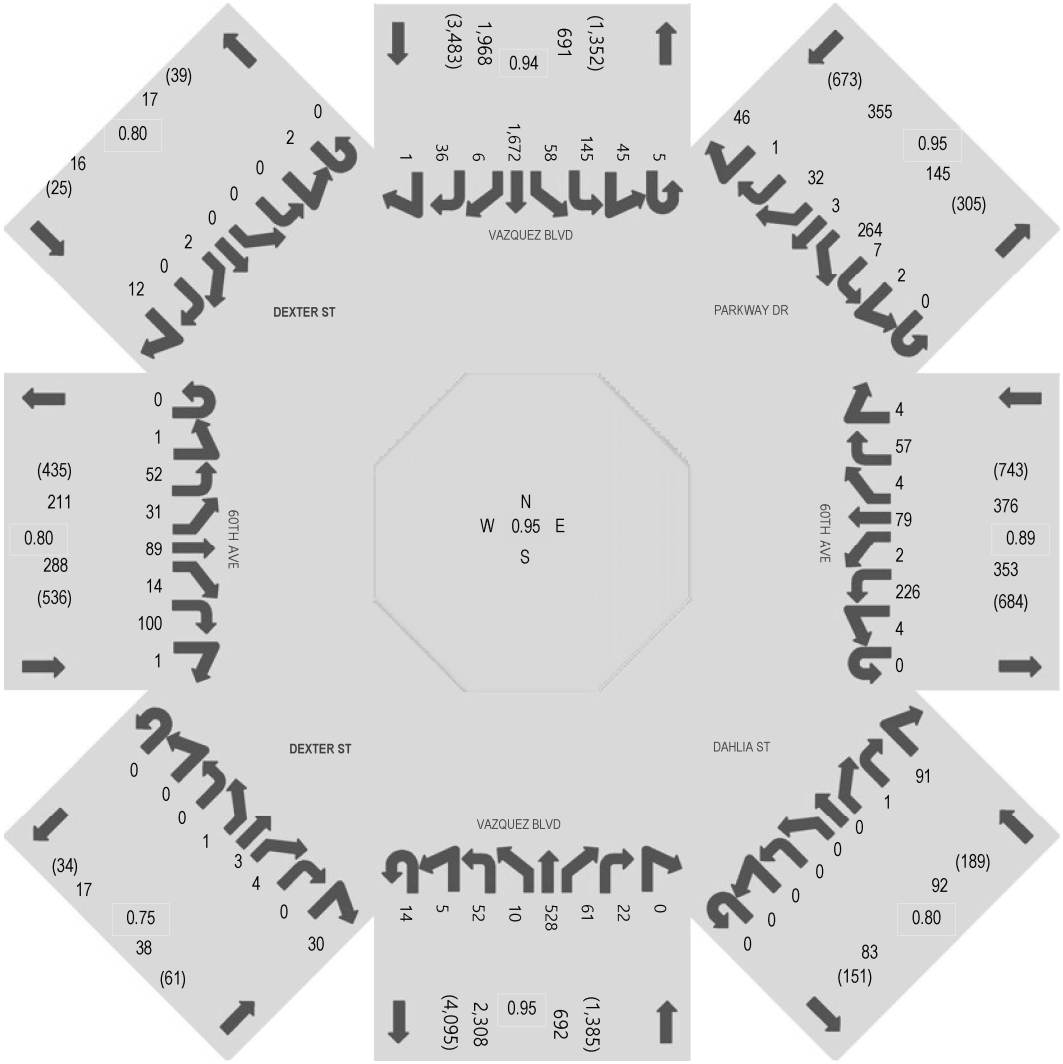
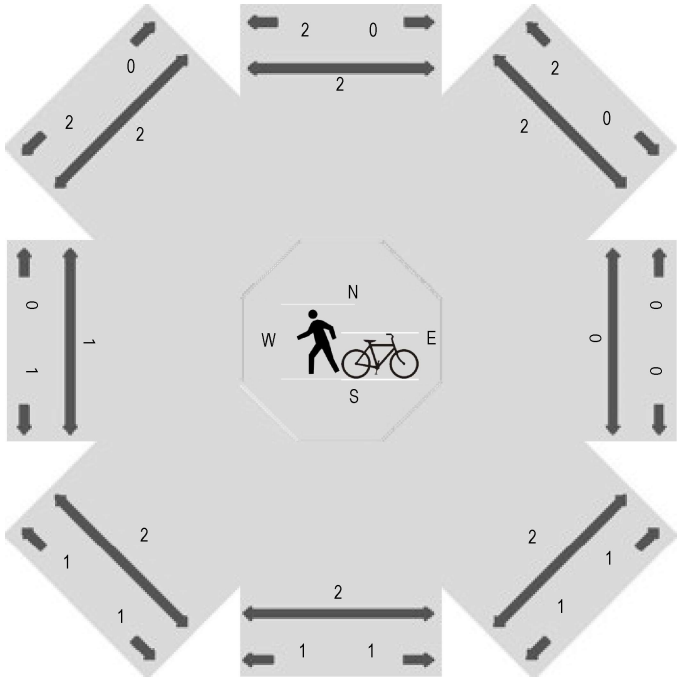
Location: 2 VAZQUEZ BLVD & 60TH AVE AM
Date: Tuesday, August 24, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
7:00 AM	0	2	48	0	15	0	12	2	0	0	0	0	0	0	0	16	1	2	22	1	138	23	3	0	0	0	0	0	0	1	1	5
7:15 AM	0	1	55	0	14	2	8	1	0	0	0	0	0	0	0	12	1	2	17	2	109	17	6	0	0	0	0	0	0	0	0	8
7:30 AM	0	1	55	0	11	0	10	0	0	0	0	0	0	0	0	18	7	0	11	3	147	12	6	0	0	0	0	0	0	0	0	7
7:45 AM	0	0	63	0	31	1	22	0	0	0	0	0	0	0	0	25	6	2	16	3	127	9	5	0	0	0	0	1	1	2	0	10
8:00 AM	0	2	53	2	23	1	17	3	0	0	0	0	0	0	1	36	0	1	8	2	145	23	5	0	0	0	0	0	2	2	0	5
8:15 AM	0	0	51	0	24	0	17	3	0	0	0	0	0	0	0	28	2	3	15	2	122	18	9	0	0	0	1	1	1	1	0	8
8:30 AM	0	0	57	0	15	0	28	4	0	0	0	0	0	0	0	26	3	0	8	4	116	18	4	0	0	0	1	1	0	0	0	1
8:45 AM	0	1	49	2	14	2	20	1	0	0	0	0	0	0	0	27	0	3	22	3	128	18	4	1	0	0	0	1	0	0	0	0
Count Total	0	7	431	4	147	6	134	14	0	0	0	0	0	0	1	188	20	13	119	20	1,032	138	42	1	0	0	2	4	4	6	1	44
Peak Hour	0	4	226	2	79	4	57	4	0	0	0	0	0	0	1	91	14	5	52	10	528	61	22	0	0	0	0	1	3	4	0	30

Interval Start Time	Eastbound								Southeastbound								Southbound								Southwestbound								Total	Rolling Hour
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR		
7:00 AM	0	1	5	5	18	2	20	0	0	0	0	0	0	0	0	2	0	14	23	17	446	2	22	0	0	2	1	67	1	4	0	7	951	3,771
7:15 AM	0	0	8	6	22	7	22	0	0	0	0	0	0	0	0	3	0	9	31	15	405	1	11	1	0	0	2	64	0	11	1	9	883	3,825
7:30 AM	0	1	14	7	17	4	24	0	0	0	0	0	0	0	0	3	1	9	27	17	446	3	14	0	0	0	2	66	2	5	0	14	964	3,727
7:45 AM	0	0	18	9	29	2	32	0	0	1	0	0	0	1	0	3	0	9	43	11	392	0	4	0	0	1	1	73	1	8	0	11	973	3,513
8:00 AM	0	0	12	9	21	1	22	1	0	1	0	0	0	1	0	3	4	18	44	15	429	2	7	0	0	1	2	61	0	8	0	12	1,005	3,324
8:15 AM	0	0	5	3	21	5	29	0	0	0	0	0	0	1	0	1	0	15	30	8	257	0	12	0	0	3	2	70	0	6	2	9	785	
8:30 AM	0	0	10	3	26	4	26	0	0	0	0	0	0	0	0	3	0	16	33	6	252	0	9	2	0	2	0	48	1	7	1	15	750	
8:45 AM	0	0	10	4	20	6	24	1	0	0	0	0	0	0	0	2	2	12	34	10	279	2	11	1	0	0	2	43	0	10	1	14	784	
Count Total	0	2	82	46	174	31	199	2	0	2	0	0	0	3	0	20	7	102	265	99	2,906	10	90	4	0	9	12	492	5	59	5	91	7,095	
Peak Hour	0	1	52	31	89	14	100	1	0	2	0	0	0	2	0	12	5	45	145	58	1,672	6	36	1	0	2	7	264	3	32	1	46	3,825	

ALL TRAFFIC DATA SERVICES
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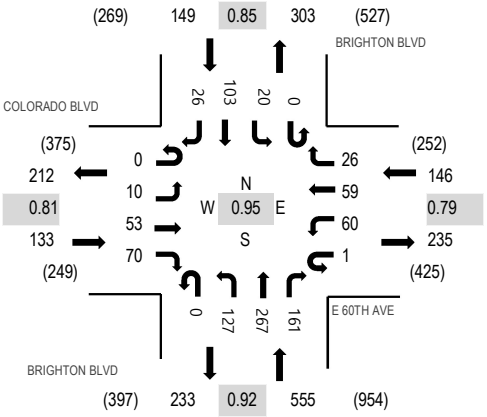
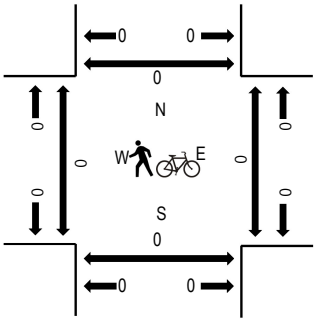
Location: 1 BRIGHTON BLVD & E 60TH AVE PM
Date: Tuesday, August 24, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	COLORADO BLVD Eastbound				E 60TH AVE Westbound				BRIGHTON BLVD Northbound				BRIGHTON BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	10	26	0	19	13	9	0	27	67	39	0	6	30	8	259	983	0	0	0	0
4:15 PM	0	1	14	14	0	21	12	13	0	31	64	34	0	5	26	6	241	962	0	0	0	0
4:30 PM	0	2	12	21	1	11	16	0	0	34	73	44	0	6	22	3	245	925	0	0	0	0
4:45 PM	0	2	17	9	0	9	18	4	0	35	63	44	0	3	25	9	238	861	0	0	0	0
5:00 PM	0	0	16	20	0	11	21	4	0	27	60	40	0	6	27	6	238	741	0	0	0	0
5:15 PM	0	2	8	12	0	8	17	3	0	26	57	41	0	5	22	3	204		0	0	0	0
5:30 PM	0	1	14	15	0	7	9	10	0	20	59	14	0	6	21	5	181		0	0	0	0
5:45 PM	0	1	19	8	0	6	8	2	0	14	25	16	0	5	7	7	118		0	1	0	0
Count Total	0	14	110	125	1	92	114	45	0	214	468	272	0	42	180	47	1,724		0	1	0	0
Peak Hour	0	10	53	70	1	60	59	26	0	127	267	161	0	20	103	26	983		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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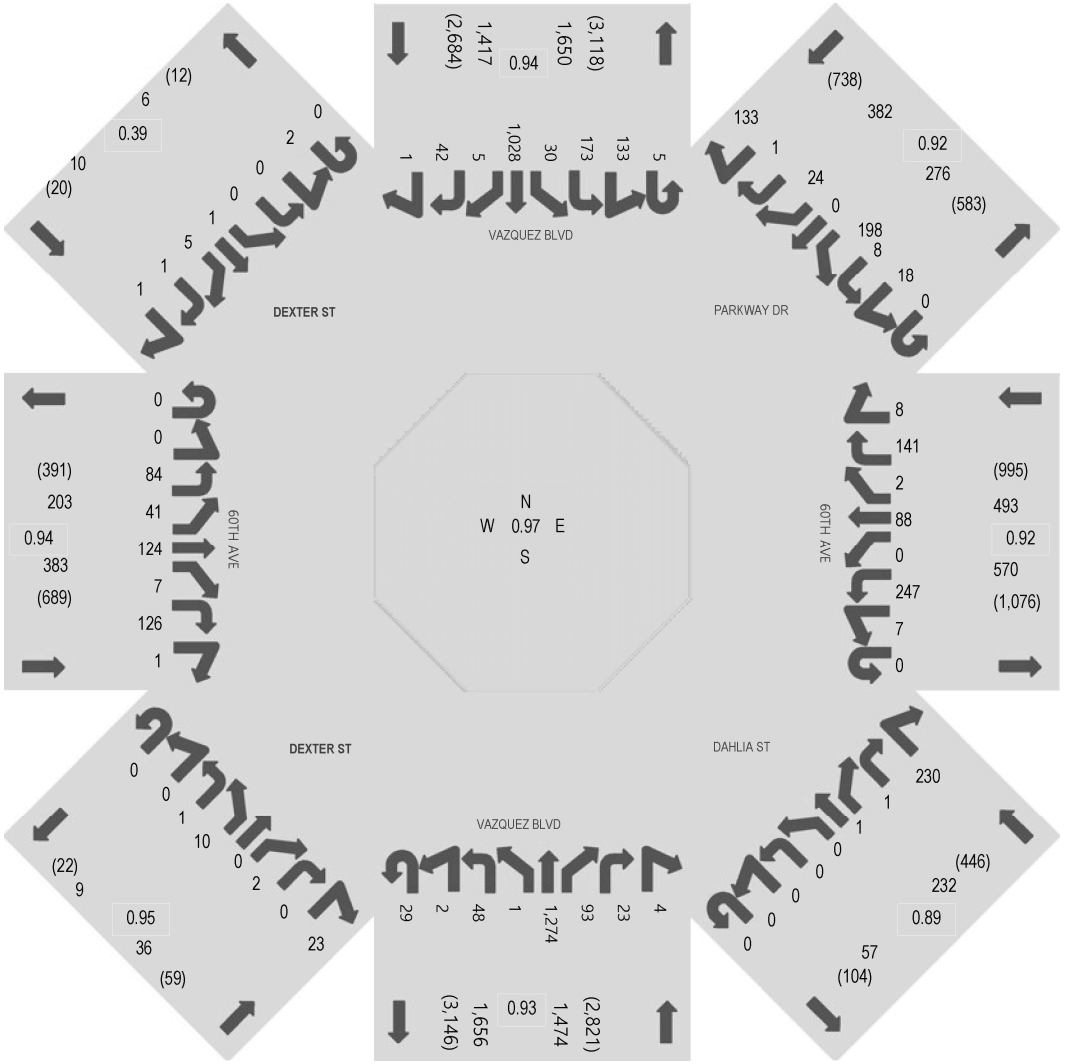
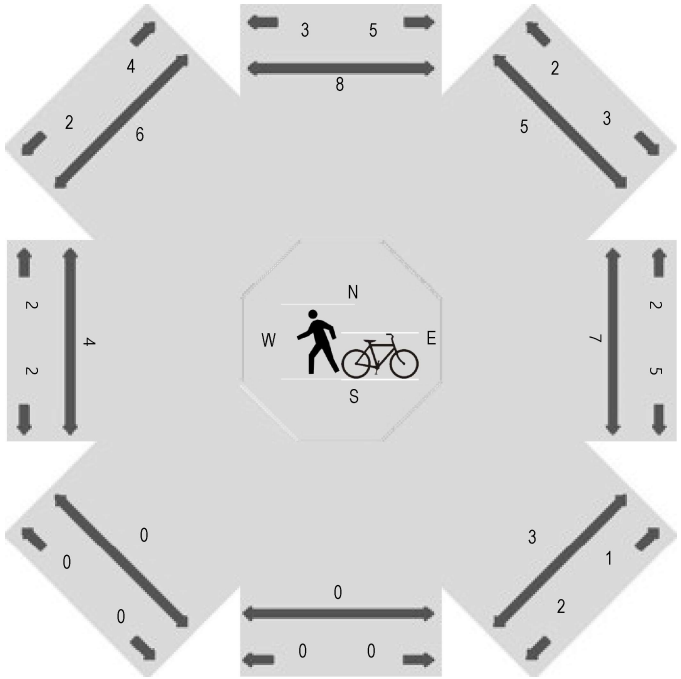
Location: 2 VAZQUEZ BLVD & 60TH AVE PM
Date: Tuesday, August 24, 2021
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
4:00 PM	0	2	68	0	22	0	25	6	0	0	0	0	0	0	0	66	5	1	9	1	272	27	6	0	0	1	0	0	0	2	0	6
4:15 PM	0	1	58	0	24	0	40	1	0	0	0	0	0	0	0	67	3	1	15	1	337	28	9	1	0	0	0	2	0	0	0	8
4:30 PM	0	1	62	0	27	1	37	0	0	0	0	0	0	1	1	41	7	0	5	0	318	29	4	2	0	0	0	4	0	1	0	5
4:45 PM	0	1	67	0	19	1	32	5	0	0	0	0	0	0	0	63	8	0	13	0	285	15	4	0	0	0	0	4	0	0	0	5
5:00 PM	0	4	60	0	18	0	32	2	0	0	0	0	0	0	0	59	11	1	15	0	334	21	6	1	0	0	1	0	0	1	0	5
5:15 PM	0	1	67	1	27	0	40	1	0	0	0	0	0	0	0	65	14	0	8	0	324	30	2	0	0	0	0	4	0	0	0	2
5:30 PM	0	1	72	0	18	2	27	3	0	0	0	0	0	0	0	37	5	1	9	1	280	30	9	2	0	0	0	4	0	0	0	1
5:45 PM	0	0	62	0	15	1	41	0	0	0	0	0	0	0	0	46	1	0	8	0	255	39	6	2	0	0	0	1	1	0	0	1
Count Total	0	11	516	1	170	5	274	18	0	0	0	0	0	1	1	444	54	4	82	3	2,405	219	46	8	0	1	1	19	1	4	0	33
Peak Hour	0	7	247	0	88	2	141	8	0	0	0	0	0	1	1	230	29	2	48	1	1,274	93	23	4	0	0	1	10	0	2	0	23

Interval Start Time	Eastbound								Southeastbound								Southbound								Southwestbound								Total	Rolling Hour
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR		
4:00 PM	0	0	18	12	30	0	28	1	0	1	0	0	0	5	0	3	0	32	41	8	243	1	10	0	0	4	3	51	1	13	0	38	1,062	4,395
4:15 PM	0	0	21	13	29	1	30	0	0	1	0	0	0	2	0	1	1	26	40	10	263	2	11	0	0	2	4	44	0	9	0	39	1,145	4,427
4:30 PM	0	0	22	7	32	2	34	0	0	0	0	0	0	0	1	0	0	37	41	7	279	3	10	0	0	6	0	56	0	1	0	33	1,117	4,367
4:45 PM	0	0	22	13	26	3	25	1	0	0	0	0	0	0	0	0	2	35	52	6	250	0	13	1	0	2	1	53	0	7	1	36	1,071	4,215
5:00 PM	0	0	19	8	37	1	37	0	0	1	0	0	1	3	0	0	2	35	40	7	236	0	8	0	0	8	3	45	0	7	0	25	1,094	4,057
5:15 PM	0	0	23	10	29	1	16	0	0	0	0	0	0	0	0	0	2	27	32	3	249	2	9	0	0	2	1	53	2	9	1	28	1,085	
5:30 PM	0	0	14	13	27	2	21	0	0	0	0	0	0	0	0	0	4	34	46	7	209	1	10	0	0	1	3	40	0	6	0	25	965	
5:45 PM	0	0	19	7	16	2	17	0	0	0	0	0	0	0	0	1	2	35	38	9	204	1	8	0	0	1	0	50	1	2	0	21	913	
Count Total	0	0	158	83	226	12	208	2	0	3	0	0	1	10	1	5	13	261	330	57	1,933	10	79	1	0	26	15	392	4	54	2	245	8,452	
Peak Hour	0	0	84	41	124	7	126	1	0	2	0	0	1	5	1	1	5	133	173	30	1,028	5	42	1	0	18	8	198	0	24	1	133	4,427	

All Traffic Data Services, LLC

www.alltrafficdata.net

Site Code: 1
Station ID: 1
60TH AVE E.O. BRIGHTON BLVD

Latitude: 0' 0.0000 Undefined

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/02/21	0	2	3	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
04:00	0	37	2	0	0	0	0	0	0	0	0	0	0	39
05:00	0	94	5	0	**1**	0	0	0	0	0	0	0	0	100
06:00	0	102	**15**	0	0	0	0	0	0	0	0	0	0	117
07:00	**2**	90	12	0	1	0	0	**1**	0	0	0	0	0	106
08:00	1	96	14	0	0	0	0	0	0	0	0	0	0	111
09:00	0	65	10	0	0	0	0	0	0	0	0	0	0	75
10:00	0	84	12	0	1	0	0	0	0	0	0	0	0	97
11:00	1	**122**	10	0	0	0	0	0	0	0	0	0	0	**133**
12 PM	**1**	136	10	0	0	0	0	1	0	0	0	0	0	148
13:00	1	75	8	0	0	0	0	1	0	0	0	0	0	85
14:00	0	116	**12**	0	0	0	0	0	0	0	0	0	0	128
15:00	1	122	9	0	**3**	0	0	0	0	0	0	0	0	135
16:00	0	**148**	10	0	0	0	0	**2**	0	0	0	0	0	**160**
17:00	1	142	3	0	2	0	0	0	0	0	0	0	0	148
18:00	1	67	3	0	0	0	0	0	0	0	0	0	0	71
19:00	0	33	3	0	0	0	0	0	0	0	0	0	0	36
20:00	0	37	1	0	0	0	0	0	0	0	0	0	0	38
21:00	1	26	1	0	0	0	0	0	0	0	0	0	0	28
22:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
23:00	0	10	0	0	1	0	0	0	0	0	0	0	0	11
Day Total	10	1640	145	0	9	0	0	5	0	0	0	0	0	1809
Percent	0.6%	90.7%	8.0%	0.0%	0.5%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	06:00		05:00			07:00						11:00
Vol.	2	122	15		1			1						133
PM Peak	12:00	16:00	14:00		15:00			16:00						16:00
Vol.	1	148	12		3			2						160
Grand Total	10	1640	145	0	9	0	0	5	0	0	0	0	0	1809
Percent	0.6%	90.7%	8.0%	0.0%	0.5%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

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Site Code: 1
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60TH AVE E.O. BRIGHTON BLVD

Latitude: 0' 0.0000 Undefined

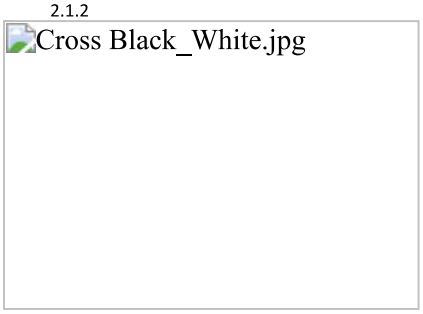
WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/02/21	0	11	1	0	0	0	0	0	0	0	0	0	0	12
01:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
05:00	**1**	31	4	0	0	0	0	0	0	0	0	0	0	36
06:00	0	134	10	0	**2**	0	0	1	0	0	0	0	0	147
07:00	0	**273**	**17**	0	2	0	0	**3**	0	0	0	0	0	**295**
08:00	1	234	17	0	2	0	0	0	0	0	0	0	0	254
09:00	0	99	13	0	1	0	0	0	0	0	0	0	0	113
10:00	0	83	5	0	1	0	0	1	0	0	0	0	0	90
11:00	0	145	8	0	0	0	0	0	0	0	0	0	0	153
12 PM	0	122	7	0	1	0	0	0	0	0	0	0	0	130
13:00	0	108	8	0	0	0	0	0	0	0	0	0	0	116
14:00	1	120	13	0	2	0	0	0	0	0	0	0	0	136
15:00	0	206	10	0	**3**	**1**	0	0	0	0	0	0	0	220
16:00	1	**238**	**16**	0	2	0	0	0	0	0	0	0	0	**257**
17:00	**3**	218	8	0	0	0	0	0	0	0	0	0	0	229
18:00	0	101	4	0	1	0	0	0	0	0	0	0	0	106
19:00	0	74	3	0	0	0	0	0	0	0	0	0	0	77
20:00	0	36	3	0	0	0	0	0	0	0	0	0	0	39
21:00	0	20	0	0	0	0	0	0	0	0	0	0	0	20
22:00	1	37	0	0	0	0	0	0	0	0	0	0	0	38
23:00	0	21	1	0	0	0	0	0	0	0	0	0	0	22
Day Total	8	2354	150	0	17	1	0	5	0	0	0	0	0	2535
Percent	0.3%	92.9%	5.9%	0.0%	0.7%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	07:00	07:00		06:00			07:00						07:00
Vol.	1	273	17		2			3						295
PM Peak	17:00	16:00	16:00		15:00	15:00								16:00
Vol.	3	238	16		3	1								257
Grand Total	8	2354	150	0	17	1	0	5	0	0	0	0	0	2535
Percent	0.3%	92.9%	5.9%	0.0%	0.7%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	

Colo Dept of Trans.

MaxTime Timing Shee 2.1.2

Administration



Unit Information

Controller ID	0
Main St.	SH 6 & 85
Side St.	60th Ave

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	DHCP
1	10.77.111.120	255.255.255.0	10.77.111.1	Disable	
2	10.20.70.51	255.255.255.0	0.0.0.0	Disable	

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux_P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	0	Auto Ped Clr	Enable	Red Revert	4.0	Backup Time	600	Ext Mode	Disable
All Red Exit	6	Grn Flash Freq.	60	Yel Flash Freq.	60	MCE Enable	Enable	Free Seq.	1
MCE Seq.	1	Start Yellow	0.0	Start Red	0.0	Start Clear Hold	6		

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	4	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	15	24	22	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	15	5	8	5	15	5	8	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	3.5	6.0	3.5	3.5	5.0	6.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	26	35	12	17	20	35	11	26	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	18	30	10	20	10	30	8	45	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	2.0	3.0	2.0	2.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	3.5	5.0	3.5	3.5	5.0	5.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																				
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr																			
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Options

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Enable	X	X	X	X	X	X	X	X												
Auto Flash Ent.				X																
Auto Flash Exit		X				X														
Non Actuated I																				
Non Actuated II																				
Non Lock Mem		X	X	X	X	X	X	X												
Min Veh Recall																				
Max Veh Recall		X				X														
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Enable																				
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II																				
Non Lock Mem																				
Min Veh Recall																				
Max Veh Recall																				
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Additional Phase Options

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phase Configuration

Ph.	Startup	Ring	Concurrent	No Served Phases	Startup Min	Description
1	Phase Not On	1	6,5		0	
2	Green No Walk	1	6,5		0	
3	Phase Not On	1			0	
4	Phase Not On	1			0	
5	Phase Not On	2	1,2		0	
6	Green No Walk	2	1,2		0	
7	Phase Not On	1			0	
8	Phase Not On	1			0	
9	None	0			0	
10	None	0			0	
11	None	0			0	
12	None	0			0	
13	None	0			0	
14	None	0			0	
15	None	0			0	
16	None	0			0	
17	None	0			0	
18	None	0			0	
19	None	0			0	
20	None	0			0	

21	None	0			0	
22	None	0			0	
23	None	0			0	
24	None	0			0	
25	None	0			0	
26	None	0			0	
27	None	0			0	
28	None	0			0	
29	None	0			0	
30	None	0			0	
31	None	0			0	
32	None	0			0	
33	None	0			0	
34	None	0			0	
35	None	0			0	
36	None	0			0	
37	None	0			0	
38	None	0			0	
39	None	0			0	
40	None	0			0	

Sequence Configuration

Sequence 1

Ring	Phases
1	1,2,a,3,b,7,c,4,d,8,e
2	6,5,a,b,c,d,e
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2

Ring	Phases
1	1,2,a,3,b,7,c,4,d,8,e
2	6,5,a,b,c,d,e
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3

Ring	Phases
1	1,2,a,3,b,7,c,4,d,8,e
2	6,5,a,b,c,d,e
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4

Ring	Phases
1	2,1,a,4,3,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 5

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 6

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 7

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 8

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 9

Ring	Phases
1	1,2,a,3,4,b

Sequence 10

Ring	Phases
1	2,1,a,3,4,b

Sequence 11

Ring	Phases
1	1,2,a,4,3,b

Sequence 12

Ring	Phases
1	2,1,a,4,3,b

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 13

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 14

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 15

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 16

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 13

11	
12	
13	
14	
15	
16	

Sequence 14

11	
12	
13	
14	
15	
16	

Sequence 15

11	
12	
13	
14	
15	
16	

Sequence 16

11	
12	
13	
14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Vehicle Detection Parameters

Det.	Call Phs	Call Ovl	Additional Call Phase	Switch Phase	Delay	Extend	Queue Limit	No Activity	Max Presence	Erratic Counts	Failed Time	Description
1	1	0		0	0.0	0.0	0	0	0	0	0	
2	2	0		0	0.0	0.0	0	0	0	0	0	
3	2	0		0	0.0	0.0	0	0	0	0	0	
4	2	0		0	0.0	0.0	0	0	0	0	0	

5	2	0		0	0.0	0.0	0	0	0	0	0	
6	2	0		0	0.0	0.0	0	0	0	0	0	
7	3	0		0	0.0	0.0	0	0	0	0	0	
8	4	0		0	0.0	0.0	0	0	0	0	0	
9	4	0		0	0.0	0.0	0	0	0	0	0	
10	4	0		0	0.0	0.0	0	0	0	0	0	
11	4	0		0	0.0	0.0	0	0	0	0	0	
12	4	0		0	0.0	0.0	0	0	0	0	0	
13	1	0		0	0.0	0.0	0	0	0	0	0	
14	3	0		0	0.0	0.0	0	0	0	0	0	
15	5	0		0	0.0	0.0	0	0	0	0	0	
16	6	0		0	0.0	0.0	0	0	0	0	0	
17	6	0		0	0.0	0.0	0	0	0	0	0	
18	6	0		0	0.0	0.0	0	0	0	0	0	
19	6	0		0	0.0	0.0	0	0	0	0	0	
20	6	0		0	0.0	0.0	0	0	0	0	0	
21	7	0		0	0.0	0.0	0	0	0	0	0	
22	8	0		0	0.0	0.0	0	0	0	0	0	
23	8	0		0	0.0	0.0	0	0	0	0	0	
24	8	0		0	0.0	0.0	0	0	0	0	0	
25	8	0		0	0.0	0.0	0	0	0	0	0	
26	8	0		0	0.0	0.0	0	0	0	0	0	
27	5	0		0	0.0	0.0	0	0	0	0	0	
28	7	0		0	0.0	0.0	0	0	0	0	0	
29	0	0		0	0.0	0.0	0	0	0	0	0	
30	0	0		0	0.0	0.0	0	0	0	0	0	
31	0	0		0	0.0	0.0	0	0	0	0	0	
32	0	0		0	0.0	0.0	0	0	0	0	0	
33	0	0		0	0.0	0.0	0	0	0	0	0	
34	0	0		0	0.0	0.0	0	0	0	0	0	
35	0	0		0	0.0	0.0	0	0	0	0	0	
36	0	0		0	0.0	0.0	0	0	0	0	0	
37	0	0		0	0.0	0.0	0	0	0	0	0	
38	0	0		0	0.0	0.0	0	0	0	0	0	
39	0	0		0	0.0	0.0	0	0	0	0	0	
40	0	0		0	0.0	0.0	0	0	0	0	0	
41	0	0		0	0.0	0.0	0	0	0	0	0	
42	0	0		0	0.0	0.0	0	0	0	0	0	
43	0	0		0	0.0	0.0	0	0	0	0	0	
44	0	0		0	0.0	0.0	0	0	0	0	0	
45	0	0		0	0.0	0.0	0	0	0	0	0	
46	0	0		0	0.0	0.0	0	0	0	0	0	
47	0	0		0	0.0	0.0	0	0	0	0	0	
48	0	0		0	0.0	0.0	0	0	0	0	0	
49	0	0		0	0.0	0.0	0	0	0	0	0	
50	0	0		0	0.0	0.0	0	0	0	0	0	
51	0	0		0	0.0	0.0	0	0	0	0	0	
52	0	0		0	0.0	0.0	0	0	0	0	0	
53	0	0		0	0.0	0.0	0	0	0	0	0	
54	0	0		0	0.0	0.0	0	0	0	0	0	
55	0	0		0	0.0	0.0	0	0	0	0	0	
56	0	0		0	0.0	0.0	0	0	0	0	0	
57	0	0		0	0.0	0.0	0	0	0	0	0	
58	0	0		0	0.0	0.0	0	0	0	0	0	
59	0	0		0	0.0	0.0	0	0	0	0	0	
60	0	0		0	0.0	0.0	0	0	0	0	0	
61	0	0		0	0.0	0.0	0	0	0	0	0	
62	0	0		0	0.0	0.0	0	0	0	0	0	
63	0	0		0	0.0	0.0	0	0	0	0	0	
64	0	0		0	0.0	0.0	0	0	0	0	0	
65	0	0		0	0.0	0.0	0	0	0	0	0	
66	0	0		0	0.0	0.0	0	0	0	0	0	
67	0	0		0	0.0	0.0	0	0	0	0	0	
68	0	0		0	0.0	0.0	0	0	0	0	0	

69	0	0		0	0.0	0.0	0	0	0	0	0	
70	0	0		0	0.0	0.0	0	0	0	0	0	
71	0	0		0	0.0	0.0	0	0	0	0	0	
72	0	0		0	0.0	0.0	0	0	0	0	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call																				
Red Lock call																				
Passage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Queue																				
Call	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Terminate																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call																				
Red Lock call			X																	
Passage	X	X	X	X	X	X	X	X												
Queue																				
Call	X	X	X	X	X	X	X	X												
Terminate																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call																				
Red Lock call			X																	
Passage																				
Queue																				
Call																				
Terminate																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector	X	X	X	X	X	X	X	X	X	X	X	X
Occupancy	X	X	X	X	X	X	X	X	X	X	X	X
Yellow Lock Call												
Red Lock call												
Passage												
Queue												
Call												
Terminate												

Data Collection Period	0

Pedestrian Detectors

Det	Call Phase	Call Ovlp	No Act	Max Presence	Erratic Count
1	0	0	0	0	0
2	2	0	0	0	0
3	0	0	0	0	0
4	4	0	0	0	0
5	0	0	0	0	0
6	3	0	0	0	0
7	0	0	0	0	0
8	8	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0

Det	Call Phase	Call Ovlp	No Act	Max Presence	Erratic Count
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	0	0	0	0	0
31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0

15	0	0	0	0	0
16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0

35	0	0	0	0	0
36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0

Overlaps

OLP	Type	Included Phases	Modifier Phases	Trail GRN	Trail YEL	Trail RED	Walk 1	Ped Clr 1	Walk 2	Ped Clr 2	Delay	Flash	Descriptions
1	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
2	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
3	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
4	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
5	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
6	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
7	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
8	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
9	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
10	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
11	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
12	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
13	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
14	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
15	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
16	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
17	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
18	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
19	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
20	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
21	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
22	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
23	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
24	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
25	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
26	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
27	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
28	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
29	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
30	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
31	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
32	Off			0	0.0	0.0	0	0	0	0	0.0	Off	

Coordination Parameters

Operational Mode	Correction Mode	Maximum Mode	Force Mode
Automatic	Shortway (Auto)	Per Pattern	Floating

Patterns

Patt.	Cycle	Offset 1	Offset 2	Offset 2	Split	Sequence	Ref. Color	Max Mode	Phs Pln	Det Pln	Ped Pln
1	120	96	0	0	1	1	Yel	Inh	1	1	1
2	120	47	0	0	2	2	Yel	Inh	1	1	1
3	150	106	0	0	3	3	Yel	Inh	1	1	1
4	0	0	0	0	4	1	Yel	Inh	1	1	1
5	0	0	0	0	0	0	Yel	Inh	1	1	1
6	0	0	0	0	0	0	Yel	Inh	1	1	1
7	0	0	0	0	0	0	Yel	Inh	1	1	1
8	0	0	0	0	0	0	Yel	Inh	1	1	1
9	0	0	0	0	0	0	Yel	Inh	1	1	1
10	0	0	0	0	0	0	Yel	Inh	1	1	1
11	0	0	0	0	0	0	Yel	Inh	1	1	1
12	0	0	0	0	0	0	Yel	Inh	1	1	1
13	0	0	0	0	0	0	Yel	Inh	1	1	1
14	0	0	0	0	0	0	Yel	Inh	1	1	1
15	0	0	0	0	0	0	Yel	Inh	1	1	1
16	0	0	0	0	0	0	Yel	Inh	1	1	1

17	0	0	0	0	0	0	Yel	Inh	1	1	1
18	0	0	0	0	0	0	Yel	Inh	1	1	1
19	0	0	0	0	0	0	Yel	Inh	1	1	1
20	0	0	0	0	20	1	Yel	Max2	1	1	1
21	0	0	0	0	0	0	Yel	Inh	1	1	1
22	0	0	0	0	0	0	Yel	Inh	1	1	1
23	0	0	0	0	0	0	Yel	Inh	1	1	1
24	0	0	0	0	0	0	Yel	Inh	1	1	1
25	0	0	0	0	0	0	Yel	Inh	1	1	1
26	0	0	0	0	0	0	Yel	Inh	1	1	1
27	0	0	0	0	0	0	Yel	Inh	1	1	1
28	0	0	0	0	0	0	Yel	Inh	1	1	1
29	0	0	0	0	0	0	Yel	Inh	1	1	1
30	0	0	0	0	0	0	Yel	Inh	1	1	1
31	0	0	0	0	0	0	Yel	Inh	1	1	1
32	0	0	0	0	0	0	Yel	Inh	1	1	1
33	0	0	0	0	0	0	Yel	Inh	1	1	1
34	0	0	0	0	0	0	Yel	Inh	1	1	1
35	0	0	0	0	0	0	Yel	Inh	1	1	1
36	0	0	0	0	0	0	Yel	Inh	1	1	1
37	0	0	0	0	0	0	Yel	Inh	1	1	1
38	0	0	0	0	0	0	Yel	Inh	1	1	1
39	0	0	0	0	0	0	Yel	Inh	1	1	1
40	0	0	0	0	0	0	Yel	Inh	1	1	1
41	0	0	0	0	0	0	Yel	Inh	1	1	1
42	0	0	0	0	0	0	Yel	Inh	1	1	1
43	0	0	0	0	0	0	Yel	Inh	1	1	1
44	0	0	0	0	0	0	Yel	Inh	1	1	1
45	0	0	0	0	0	0	Yel	Inh	1	1	1
46	0	0	0	0	0	0	Yel	Inh	1	1	1
47	0	0	0	0	0	0	Yel	Inh	1	1	1
48	0	0	0	0	0	0	Yel	Inh	1	1	1
49	0	0	0	0	0	0	Yel	Inh	1	1	1
50	0	0	0	0	0	0	Yel	Inh	1	1	1
51	0	0	0	0	0	0	Yel	Inh	1	1	1
52	0	0	0	0	0	0	Yel	Inh	1	1	1
53	0	0	0	0	0	0	Yel	Inh	1	1	1
54	0	0	0	0	0	0	Yel	Inh	1	1	1
55	0	0	0	0	0	0	Yel	Inh	1	1	1
56	0	0	0	0	0	0	Yel	Inh	1	1	1
57	0	0	0	0	0	0	Yel	Inh	1	1	1
58	0	0	0	0	0	0	Yel	Inh	1	1	1
59	0	0	0	0	0	0	Yel	Inh	1	1	1
60	0	0	0	0	0	0	Yel	Inh	1	1	1
61	0	0	0	0	0	0	Yel	Inh	1	1	1
62	0	0	0	0	0	0	Yel	Inh	1	1	1
63	0	0	0	0	0	0	Yel	Inh	1	1	1
64	0	0	0	0	0	0	Yel	Inh	1	1	1
65	0	0	0	0	0	0	Yel	Inh	1	1	1
66	0	0	0	0	0	0	Yel	Inh	1	1	1
67	0	0	0	0	0	0	Yel	Inh	1	1	1
68	0	0	0	0	0	0	Yel	Inh	1	1	1
69	0	0	0	0	0	0	Yel	Inh	1	1	1
70	0	0	0	0	0	0	Yel	Inh	1	1	1
71	0	0	0	0	0	0	Yel	Inh	1	1	1
72	0	0	0	0	0	0	Yel	Inh	1	1	1
73	0	0	0	0	0	0	Yel	Inh	1	1	1
74	0	0	0	0	0	0	Yel	Inh	1	1	1
75	0	0	0	0	0	0	Yel	Inh	1	1	1
76	0	0	0	0	0	0	Yel	Inh	1	1	1
77	0	0	0	0	0	0	Yel	Inh	1	1	1
78	0	0	0	0	0	0	Yel	Inh	1	1	1
79	0	0	0	0	0	0	Yel	Inh	1	1	1

80	0	0	0	0	0	0	Yel	Inh	1	1	1
81	0	0	0	0	0	0	Yel	Inh	1	1	1
82	0	0	0	0	0	0	Yel	Inh	1	1	1
83	0	0	0	0	0	0	Yel	Inh	1	1	1
84	0	0	0	0	0	0	Yel	Inh	1	1	1
85	0	0	0	0	0	0	Yel	Inh	1	1	1
86	0	0	0	0	0	0	Yel	Inh	1	1	1
87	0	0	0	0	0	0	Yel	Inh	1	1	1
88	0	0	0	0	0	0	Yel	Inh	1	1	1
89	0	0	0	0	0	0	Yel	Inh	1	1	1
90	0	0	0	0	0	0	Yel	Inh	1	1	1
91	0	0	0	0	0	0	Yel	Inh	1	1	1
92	0	0	0	0	0	0	Yel	Inh	1	1	1
93	0	0	0	0	0	0	Yel	Inh	1	1	1
94	0	0	0	0	0	0	Yel	Inh	1	1	1
95	0	0	0	0	0	0	Yel	Inh	1	1	1
96	0	0	0	0	0	0	Yel	Inh	1	1	1
97	0	0	0	0	0	0	Yel	Inh	1	1	1
98	0	0	0	0	0	0	Yel	Inh	1	1	1
99	0	0	0	0	0	0	Yel	Inh	1	1	1
100	0	0	0	0	0	0	Yel	Inh	1	1	1
101	0	0	0	0	0	0	Yel	Inh	1	1	1
102	0	0	0	0	0	0	Yel	Inh	1	1	1
103	0	0	0	0	0	0	Yel	Inh	1	1	1
104	0	0	0	0	0	0	Yel	Inh	1	1	1
105	0	0	0	0	0	0	Yel	Inh	1	1	1
106	0	0	0	0	0	0	Yel	Inh	1	1	1
107	0	0	0	0	0	0	Yel	Inh	1	1	1
108	0	0	0	0	0	0	Yel	Inh	1	1	1
109	0	0	0	0	0	0	Yel	Inh	1	1	1
110	0	0	0	0	0	0	Yel	Inh	1	1	1
111	0	0	0	0	0	0	Yel	Inh	1	1	1
112	0	0	0	0	0	0	Yel	Inh	1	1	1
113	0	0	0	0	0	0	Yel	Inh	1	1	1
114	0	0	0	0	0	0	Yel	Inh	1	1	1
115	0	0	0	0	0	0	Yel	Inh	1	1	1
116	0	0	0	0	0	0	Yel	Inh	1	1	1
117	0	0	0	0	0	0	Yel	Inh	1	1	1
118	0	0	0	0	0	0	Yel	Inh	1	1	1
119	0	0	0	0	0	0	Yel	Inh	1	1	1
120	0	0	0	0	0	0	Yel	Inh	1	1	1
121	0	0	0	0	0	0	Yel	Inh	1	1	1
122	0	0	0	0	0	0	Yel	Inh	1	1	1
123	0	0	0	0	0	0	Yel	Inh	1	1	1
124	0	0	0	0	0	0	Yel	Inh	1	1	1
125	0	0	0	0	0	0	Yel	Inh	1	1	1
126	0	0	0	0	0	0	Yel	Inh	1	1	1
127	0	0	0	0	0	0	Yel	Inh	1	1	1
128	0	0	0	0	0	0	Yel	Inh	1	1	1

Split Parameters

Split 1		Coord	Ref	
PH.	Time	PH	PH	Mode
1	20			None
2	34	X	X	None
3	15			None
4	18			None
5	15			None
6	39	X	X	None
7	14			None
8	19			None
9	0			None
10	0			None
11	0			None

Split 2		Coord	Ref	
PH.	Time	PH	PH	Mode
1	22			None
2	43	X	X	None
3	12			None
4	14			None
5	12			None
6	53	X	X	None
7	13			None
8	16			None
9	0			None
10	0			None
11	0			None

12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 3

PH.	Time	Coord PH	Ref PH	Mode
1	26			None
2	56	X	X	None
3	13			None
4	20			None
5	15			None
6	67	X	X	None
7	17			None
8	18			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 4

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0	X	X	None
3	0			None
4	0			None
5	0			None
6	0	X	X	None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 5

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 6

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 7

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 8

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 9

Split 10

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

Split 9

PH.	Time	Coord PH	Ref PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 10

PH.	Time	Coord PH	Ref PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 11

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 12

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 13

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 14

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 15

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None

Split 16

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None

3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 17

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 18

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 19

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 20

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0	X	X	None
3	0			None
4	0			None
5	0			None
6	0	X	X	None

Split 19

PH.	Time	Coord PH	Ref PH	Mode
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 20

PH.	Time	Coord PH	Ref PH	Mode
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Ring	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Offset																

Day Plan 1

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 2

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 3

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 4

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 5

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 6

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 7

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 8

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 9

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Day Plan 10

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

J	A	S	O	N	D
X	X	X	X	X	X

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Day Plan 11

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Day Plan 12

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Day Plan 13

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Day Plan 14

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Day Plan 15

Month of Year						Days of Week							Days of Month														
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Day Plan 1

Event	Hour	Min.	Act
1	5	0	1
2	5	30	2
3	8	30	1
4	15	0	3
5	18	0	1

Day Plan 2

Event	Hour	Min.	Act
1	7	0	1
2	22	0	20
3	0	0	
4	0	0	
5	0	0	

Day Plan 3

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan 4

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan 1

Event	Hour	Min.	Act
6	22	0	20
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 2

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 3

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 4

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 5

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 6

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 7

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 8

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 9

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 10

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 11

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 12

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 13

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 14

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 15

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 16

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 17

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 18

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 19

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 20

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	None											
16	None											
17	None											
18	None											
19	None											

Actions

		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											

20	None									
21	None									
22	None									
23	None									
24	None									
25	None									
26	None									
27	None									
28	None									
29	None									
30	None									
31	None									
32	None									

52	None									
53	None									
54	None									
55	None									
56	None									
57	None									
58	None									
59	None									
60	None									
61	None									
62	None									
63	None									
64	None									

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Link	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0
Min Duration	0	0	10	10	10	10	0	0
Min Green	0	0	0	0	0	0	0	0
Min Walk	0	0	0	0	0	0	0	0
Ent. Ped Clear	255	255	255	255	255	255	255	255
Track Green	0	0	0	0	0	0	0	0
Dwell Green	0	0	0	0	0	0	0	0
Max Presence	0	0	0	0	0	0	0	0
Enter Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Ent. Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Track Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Ped Clear	255	255	255	255	255	255	255	255
Exit Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preempt	1	2	3	4	5	6	7	8
Non Lock Mem								
Not Overide Flash								
NotOverideNextPre								
Flash Dwell								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Track phase								
Dwell Phase								
Dwell Ped								
Exit Phase								
Track Overlap								
Dwell overlap								
Cycling phase								
Cycling Ped								
Cycling Overlap								

IO Modules

IO Mod	TYPE
1	Caltrans 332
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source
1	Phs Veh	1
2	Phs Veh	2
3	Phs Veh	3
4	Phs Veh	4
5	Phs Veh	5
6	Phs Veh	6
7	Phs Veh	7
8	Phs Veh	8
9	Olp	1
10	Olp	2

Chan	Ctrl Type	Source
11	Olp	3
12	Olp	4
13	Phs Ped	2
14	Phs Ped	4
15	Phs Ped	3
16	Phs Ped	8
17	Olp	5
18	Olp	6
19	None	0
20	None	0

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow																
Flash Red	X	X	X	X	X	X	X	X								
Alt Flash	X			X	X			X								
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Startup Clearance Hold Type

1=off, 2=On, 3=Flash and 4= Alt Flash

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Red																
Yellow																
Green																
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Red																
Yellow																
Green																

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	notActive	On	Off	Off	Red
2	dltGrn	On	Off	Off	Red
3	PreGrn	Off	Off	On	Green
4	minGrn	Off	Off	On	Green
5	grnExt	Off	Off	On	Green
6	grnDwell	Off	Off	On	Green
7	preClear	Off	Off	On	Green
8	yelChange	Off	On	Off	Yellow
9	redClear	On	Off	Off	Red
10	redDwell	On	Off	Off	Red
11	Barrier	On	Off	Off	Red
12					

Pedestrian Intervals

Interval	Description	DWK	CLR	Wlk	Type
1	notActive	On	Off	Off	Dont Walk
2	dltPed	On	Off	Off	Dont Walk
3	walk	Off	Off	On	Walk
4	walkDwell	Off	Off	On	Walk
5	flashDtWlk	Flash	Off	Off	Ped Clear
6	dWalk	On	Off	Off	Dont Walk
7					
8					

Countdown Display

Display	Addr	Phase	Time
1			
2			
3			
4			
5			
6			
7			
8			

Display	Addr	Phase	Time
9			
10			
11			
12			
13			
14			
15			
16			

Display	Addr	Phase	Time
17			
18			
19			
20			
21			
22			
23			
24			

Display	Addr	Phase	Time
25			
26			
27			
28			
29			
30			
31			
32			

Manual Control Phase Groups

Grp 1		Grp 2		Grp 3		Grp 4		Grp 5		Grp 6		Grp 7		Grp 8	
Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph
1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0
11	0	11	0	11	0	11	0	11	0	11	0	11	0	11	0
12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0
13	0	13	0	13	0	13	0	13	0	13	0	13	0	13	0
14	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0
15	0	15	0	15	0	15	0	15	0	15	0	15	0	15	0
16	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0

Prioritor Settings

Prioritor	Priority Ph	Output Dly
1		0
2		0
3		0
4		0
5		0

Enabled	Lock Out Time
No	0

6		0
7		0
8		0

Loopback Functions

Func	Result Function Type	Index	Source Function Type	Index
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
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37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				

Func	Result Function Type	Index	Source Function Type	Index
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				
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63				
64				
65				
66				
67				
68				
69				
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92				
93				
94				
95				
96				
97				
98				
99				
100				

Peer Configuration

Ctrl	Peer ID	IP address	SNMP Port	Hot Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0		161	80	0	0	0	15	
2	0		161	80	0	0	0	15	
3	0		161	80	0	0	0	15	

4	0		161	80	0	0	0	15	
5	0		161	80	0	0	0	15	
6	0		161	80	0	0	0	15	
7	0		161	80	0	0	0	15	
8	0		161	80	0	0	0	15	
9	0		161	80	0	0	0	15	
10	0		161	80	0	0	0	15	
11	0		161	80	0	0	0	15	
12	0		161	80	0	0	0	15	
13	0		161	80	0	0	0	15	
14	0		161	80	0	0	0	15	
15	0		161	80	0	0	0	15	
16	0		161	80	0	0	0	15	
17	0		161	80	0	0	0	15	
18	0		161	80	0	0	0	15	
19	0		161	80	0	0	0	15	
20	0		161	80	0	0	0	15	
21	0		161	80	0	0	0	15	
22	0		161	80	0	0	0	15	
23	0		161	80	0	0	0	15	
24	0		161	80	0	0	0	15	
25	0		161	80	0	0	0	15	
26	0		161	80	0	0	0	15	
27	0		161	80	0	0	0	15	
28	0		161	80	0	0	0	15	
29	0		161	80	0	0	0	15	
30	0		161	80	0	0	0	15	
31	0		161	80	0	0	0	15	
32	0		161	80	0	0	0	15	
33	0		161	80	0	0	0	15	
34	0		161	80	0	0	0	15	
35	0		161	80	0	0	0	15	
36	0		161	80	0	0	0	15	
37	0		161	80	0	0	0	15	
38	0		161	80	0	0	0	15	
39	0		161	80	0	0	0	15	
40	0		161	80	0	0	0	15	
41	0		161	80	0	0	0	15	
42	0		161	80	0	0	0	15	
43	0		161	80	0	0	0	15	
44	0		161	80	0	0	0	15	
45	0		161	80	0	0	0	15	
46	0		161	80	0	0	0	15	
47	0		161	80	0	0	0	15	
48	0		161	80	0	0	0	15	
49	0		161	80	0	0	0	15	
50	0		161	80	0	0	0	15	
51	0		161	80	0	0	0	15	
52	0		161	80	0	0	0	15	
53	0		161	80	0	0	0	15	
54	0		161	80	0	0	0	15	
55	0		161	80	0	0	0	15	
56	0		161	80	0	0	0	15	
57	0		161	80	0	0	0	15	
58	0		161	80	0	0	0	15	
59	0		161	80	0	0	0	15	
60	0		161	80	0	0	0	15	
61	0		161	80	0	0	0	15	
62	0		161	80	0	0	0	15	
63	0		161	80	0	0	0	15	
64	0		161	80	0	0	0	15	
65	0		161	80	0	0	0	15	
66	0		161	80	0	0	0	15	
67	0		161	80	0	0	0	15	

68	0		161	80	0	0	0	15	
69	0		161	80	0	0	0	15	
70	0		161	80	0	0	0	15	
71	0		161	80	0	0	0	15	
72	0		161	80	0	0	0	15	
73	0		161	80	0	0	0	15	
74	0		161	80	0	0	0	15	
75	0		161	80	0	0	0	15	
76	0		161	80	0	0	0	15	
77	0		161	80	0	0	0	15	
78	0		161	80	0	0	0	15	
79	0		161	80	0	0	0	15	
80	0		161	80	0	0	0	15	
81	0		161	80	0	0	0	15	
82	0		161	80	0	0	0	15	
83	0		161	80	0	0	0	15	
84	0		161	80	0	0	0	15	
85	0		161	80	0	0	0	15	
86	0		161	80	0	0	0	15	
87	0		161	80	0	0	0	15	
88	0		161	80	0	0	0	15	
89	0		161	80	0	0	0	15	
90	0		161	80	0	0	0	15	
91	0		161	80	0	0	0	15	
92	0		161	80	0	0	0	15	
93	0		161	80	0	0	0	15	
94	0		161	80	0	0	0	15	
95	0		161	80	0	0	0	15	
96	0		161	80	0	0	0	15	
97	0		161	80	0	0	0	15	
98	0		161	80	0	0	0	15	
99	0		161	80	0	0	0	15	
100	0		161	80	0	0	0	15	
101	0		161	80	0	0	0	15	
102	0		161	80	0	0	0	15	
103	0		161	80	0	0	0	15	
104	0		161	80	0	0	0	15	
105	0		161	80	0	0	0	15	
106	0		161	80	0	0	0	15	
107	0		161	80	0	0	0	15	
108	0		161	80	0	0	0	15	
109	0		161	80	0	0	0	15	
110	0		161	80	0	0	0	15	
111	0		161	80	0	0	0	15	
112	0		161	80	0	0	0	15	
113	0		161	80	0	0	0	15	
114	0		161	80	0	0	0	15	
115	0		161	80	0	0	0	15	
116	0		161	80	0	0	0	15	
117	0		161	80	0	0	0	15	
118	0		161	80	0	0	0	15	
119	0		161	80	0	0	0	15	
120	0		161	80	0	0	0	15	
121	0		161	80	0	0	0	15	
122	0		161	80	0	0	0	15	
123	0		161	80	0	0	0	15	
124	0		161	80	0	0	0	15	
125	0		161	80	0	0	0	15	
126	0		161	80	0	0	0	15	
127	0		161	80	0	0	0	15	
128	0		161	80	0	0	0	15	
129	0		161	80	0	0	0	15	
130	0		161	80	0	0	0	15	

131	0		161	80	0	0	0	15	
132	0		161	80	0	0	0	15	
133	0		161	80	0	0	0	15	
134	0		161	80	0	0	0	15	
135	0		161	80	0	0	0	15	
136	0		161	80	0	0	0	15	
137	0		161	80	0	0	0	15	
138	0		161	80	0	0	0	15	
139	0		161	80	0	0	0	15	
140	0		161	80	0	0	0	15	
141	0		161	80	0	0	0	15	
142	0		161	80	0	0	0	15	
143	0		161	80	0	0	0	15	
144	0		161	80	0	0	0	15	
145	0		161	80	0	0	0	15	
146	0		161	80	0	0	0	15	
147	0		161	80	0	0	0	15	
148	0		161	80	0	0	0	15	
149	0		161	80	0	0	0	15	
150	0		161	80	0	0	0	15	
151	0		161	80	0	0	0	15	
152	0		161	80	0	0	0	15	
153	0		161	80	0	0	0	15	
154	0		161	80	0	0	0	15	
155	0		161	80	0	0	0	15	
156	0		161	80	0	0	0	15	
157	0		161	80	0	0	0	15	
158	0		161	80	0	0	0	15	
159	0		161	80	0	0	0	15	
160	0		161	80	0	0	0	15	
161	0		161	80	0	0	0	15	
162	0		161	80	0	0	0	15	
163	0		161	80	0	0	0	15	
164	0		161	80	0	0	0	15	
165	0		161	80	0	0	0	15	
166	0		161	80	0	0	0	15	
167	0		161	80	0	0	0	15	
168	0		161	80	0	0	0	15	
169	0		161	80	0	0	0	15	
170	0		161	80	0	0	0	15	
171	0		161	80	0	0	0	15	
172	0		161	80	0	0	0	15	
173	0		161	80	0	0	0	15	
174	0		161	80	0	0	0	15	
175	0		161	80	0	0	0	15	
176	0		161	80	0	0	0	15	
177	0		161	80	0	0	0	15	
178	0		161	80	0	0	0	15	
179	0		161	80	0	0	0	15	
180	0		161	80	0	0	0	15	
181	0		161	80	0	0	0	15	
182	0		161	80	0	0	0	15	
183	0		161	80	0	0	0	15	
184	0		161	80	0	0	0	15	
185	0		161	80	0	0	0	15	
186	0		161	80	0	0	0	15	
187	0		161	80	0	0	0	15	
188	0		161	80	0	0	0	15	
189	0		161	80	0	0	0	15	
190	0		161	80	0	0	0	15	
191	0		161	80	0	0	0	15	
192	0		161	80	0	0	0	15	
193	0		161	80	0	0	0	15	
194	0		161	80	0	0	0	15	

195	0		161	80	0	0	0	15	
196	0		161	80	0	0	0	15	
197	0		161	80	0	0	0	15	
198	0		161	80	0	0	0	15	
199	0		161	80	0	0	0	15	
200	0		161	80	0	0	0	15	
201	0		161	80	0	0	0	15	
202	0		161	80	0	0	0	15	
203	0		161	80	0	0	0	15	
204	0		161	80	0	0	0	15	
205	0		161	80	0	0	0	15	
206	0		161	80	0	0	0	15	
207	0		161	80	0	0	0	15	
208	0		161	80	0	0	0	15	
209	0		161	80	0	0	0	15	
210	0		161	80	0	0	0	15	
211	0		161	80	0	0	0	15	
212	0		161	80	0	0	0	15	
213	0		161	80	0	0	0	15	
214	0		161	80	0	0	0	15	
215	0		161	80	0	0	0	15	
216	0		161	80	0	0	0	15	
217	0		161	80	0	0	0	15	
218	0		161	80	0	0	0	15	
219	0		161	80	0	0	0	15	
220	0		161	80	0	0	0	15	
221	0		161	80	0	0	0	15	
222	0		161	80	0	0	0	15	
223	0		161	80	0	0	0	15	
224	0		161	80	0	0	0	15	
225	0		161	80	0	0	0	15	
226	0		161	80	0	0	0	15	
227	0		161	80	0	0	0	15	
228	0		161	80	0	0	0	15	
229	0		161	80	0	0	0	15	
230	0		161	80	0	0	0	15	
231	0		161	80	0	0	0	15	
232	0		161	80	0	0	0	15	
233	0		161	80	0	0	0	15	
234	0		161	80	0	0	0	15	
235	0		161	80	0	0	0	15	
236	0		161	80	0	0	0	15	
237	0		161	80	0	0	0	15	
238	0		161	80	0	0	0	15	
239	0		161	80	0	0	0	15	
240	0		161	80	0	0	0	15	
241	0		161	80	0	0	0	15	
242	0		161	80	0	0	0	15	
243	0		161	80	0	0	0	15	
244	0		161	80	0	0	0	15	
245	0		161	80	0	0	0	15	
246	0		161	80	0	0	0	15	
247	0		161	80	0	0	0	15	
248	0		161	80	0	0	0	15	
249	0		161	80	0	0	0	15	
250	0		161	80	0	0	0	15	
251	0		161	80	0	0	0	15	
252	0		161	80	0	0	0	15	
253	0		161	80	0	0	0	15	
254	0		161	80	0	0	0	15	
255	0		161	80	0	0	0	15	

Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	
9	None	60	1	300	240	
10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	Stop Time
2	
3	
4	
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12	
13	
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Appendix B

Trip Generation Detailed Land Use Report

Detailed Land Use Data

For 50 Employees of Materials Processing Facility

(110) General Light Industrial

Open Date: 9/17/2021

Project: 4150 E 60th Avenue

Analysis Date: 9/17/2024

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	171	0	3.05	1.53	23.5	1.64	80	50	50	True	Ln(T) = 0.77 Ln(X) + 2.13	0.85
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	25	0	0.52	0.05	2.07	0.26	91	83	17	True	T = 0.54(X) - 2.2	0.85
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	23	0	0.49	0.04	2.33	0.23	84	22	78	True	T = 0.54(X) - 3.96	0.85
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 50 Employees of Office Building

(710) General Office Building

Open Date: 9/17/2021

Project: 4150 E 60th Avenue

Analysis Date: 9/17/2024

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	281	0	3.28	1.59	26.24	1.44	528	50	50	True	Ln(T) = 0.8 Ln(X) + 2.51	0.91
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	29	0	0.37	0.09	2.4	0.27	188	83	17	True	Ln(T) = 0.72 Ln(X) + 0.56	0.81
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	37	0	0.4	0.18	4.5	0.36	179	20	80	True	T = 0.27(X) + 23.57	0.81
Source : Trip Generation Manual 10th Edition												

Appendix C

HCM Level of Service Reports

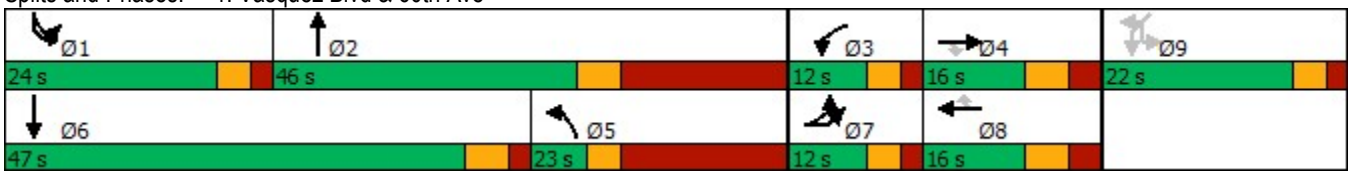
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	53	34	107	133	230	85	57	4	81	530	61	22
Future Volume (vph)	53	34	107	133	230	85	57	4	81	530	61	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		0	
Storage Lanes		1		1	2		1		2		0	
Taper Length (ft)		25			25				25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.97	0.91	0.91	0.91
Frt				0.850			0.850			0.977		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1687	1776	1509	3273	1776	1509	0	3273	4736	0	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1687	1776	1509	3273	1776	1509	0	3273	4736	0	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)				336			336			5		
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.78	0.78	0.83	0.84	0.87	0.81	0.78	0.78	0.81	0.92	0.79	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	68	44	129	158	264	105	73	5	100	576	77	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	129	158	264	105	78	0	100	681	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1	1	1	1	1		1	1		
Detector Template	Left	Left	Thru	Right	Left	Thru	Right		Left	Thru		
Leading Detector (ft)	20	40	40	40	40	40	40		40	40		
Trailing Detector (ft)	0	0	0	0	0	0	0		0	0		
Detector 1 Position(ft)	0	0	0	0	0	0	0		0	0		
Detector 1 Size(ft)	20	40	40	40	40	40	40		40	40		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm		Prot	NA		
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases				4			8					
Detector Phase	7	7	4	4	3	8	8		5	2		
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0	8.0	5.0	8.0	8.0		5.0	15.0		
Minimum Split (s)	10.0	10.0	16.0	16.0	10.0	16.0	16.0		23.0	34.0		

Lane Group	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	50	203	1675	43	9	264	36	46
Future Volume (vph)	50	203	1675	43	9	264	36	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		220		0		0	150	
Storage Lanes		2		0		2	1	
Taper Length (ft)		25				25		
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.996				0.850	
Flt Protected	0.950	0.950			0.950	0.950		
Satd. Flow (prot)	1687	1687	4828	0	1687	1687	1509	0
Flt Permitted	0.950	0.950			0.950	0.950		
Satd. Flow (perm)	1687	1687	4828	0	1687	1687	1509	0
Right Turn on Red				Yes				Yes
Satd. Flow (RTOR)			4				355	
Link Speed (mph)			45			30		
Link Distance (ft)			1000			903		
Travel Time (s)			15.2			20.5		
Peak Hour Factor	0.78	0.87	0.93	0.78	0.78	0.88	0.78	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	64	233	1801	55	12	300	46	59
Shared Lane Traffic (%)								
Lane Group Flow (vph)	64	233	1856	0	12	300	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			24			24		
Link Offset(ft)			0			0		
Crosswalk Width(ft)			16			16		
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15	15	9	9
Number of Detectors	1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Left	Right	
Leading Detector (ft)	40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0	
Detector 1 Size(ft)	40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Perm	Perm	Perm	
Protected Phases	1	1	6					
Permitted Phases					9	9	9	
Detector Phase	1	1	6		9	9	9	
Switch Phase								
Minimum Initial (s)	5.0	5.0	15.0		10.0	10.0	10.0	
Minimum Split (s)	12.0	12.0	21.0		15.0	15.0	15.0	

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	12.0	12.0	16.0	16.0	12.0	16.0	16.0		23.0	46.0		
Total Split (%)	10.0%	10.0%	13.3%	13.3%	10.0%	13.3%	13.3%		19.2%	38.3%		
Maximum Green (s)	7.0	7.0	9.0	9.0	7.0	9.0	9.0		5.0	27.0		
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0		3.0	4.0		
All-Red Time (s)	2.0	2.0	3.0	3.0	2.0	3.0	3.0		15.0	15.0		
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Recall Mode	None	None	None	None	None	None	None		None	Max		
Act Effct Green (s)		7.0	9.0	9.0	7.0	9.0	9.0		5.0	27.6		
Actuated g/C Ratio		0.06	0.08	0.08	0.06	0.08	0.08		0.04	0.23		
v/c Ratio		1.14	0.97	0.37	1.39	0.79	0.18		0.74	0.62		
Control Delay		184.5	126.2	2.5	245.6	91.8	1.0		86.7	44.4		
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		184.5	126.2	2.5	245.6	91.8	1.0		86.7	44.4		
LOS		F	F	A	F	F	A		F	D		
Approach Delay			93.6			166.8				49.8		
Approach LOS			F			F				D		

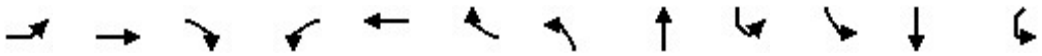
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay: 99.8		Intersection LOS: F	
Intersection Capacity Utilization 95.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Total Split (s)	24.0	24.0	47.0		22.0	22.0	22.0	
Total Split (%)	20.0%	20.0%	39.2%		18.3%	18.3%	18.3%	
Maximum Green (s)	19.0	19.0	41.0		17.0	17.0	17.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lead					
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	Max		None	None	None	
Act Effct Green (s)	18.4	18.4	41.0		17.0	17.0	17.0	
Actuated g/C Ratio	0.15	0.15	0.34		0.14	0.14	0.14	
v/c Ratio	0.25	0.90	1.12		0.05	1.26	0.20	
Control Delay	47.1	85.3	101.2		45.3	188.8	0.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	47.1	85.3	101.2		45.3	188.8	0.9	
LOS	D	F	F		D	F	A	
Approach Delay			97.9			137.4		
Approach LOS			F			F		

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL2	SBL	SBT	SWL2
Lane Group Flow (vph)	112	129	158	264	105	78	100	681	64	233	1856	12
v/c Ratio	1.14	0.97	0.37	1.39	0.79	0.18	0.74	0.62	0.25	0.90	1.12	0.05
Control Delay	184.5	126.2	2.5	245.6	91.8	1.0	86.7	44.4	47.1	85.3	101.2	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	184.5	126.2	2.5	245.6	91.8	1.0	86.7	44.4	47.1	85.3	101.2	45.3
Queue Length 50th (ft)	~101	101	0	~140	81	0	40	174	44	178	~609	8
Queue Length 95th (ft)	#180	#202	0	#217	#151	0	#71	219	75	#305	#707	23
Internal Link Dist (ft)		400			1399			569			920	
Turn Bay Length (ft)			100	220			220		220	220		
Base Capacity (vph)	98	133	423	190	133	423	136	1091	267	267	1652	238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.97	0.37	1.39	0.79	0.18	0.74	0.62	0.24	0.87	1.12	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SWL	SWR
Lane Group Flow (vph)	300	105
v/c Ratio	1.26	0.20
Control Delay	188.8	0.9
Queue Delay	0.0	0.0
Total Delay	188.8	0.9
Queue Length 50th (ft)	~291	0
Queue Length 95th (ft)	#454	0
Internal Link Dist (ft)	823	
Turn Bay Length (ft)		150
Base Capacity (vph)	238	518
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.26	0.20

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	53	34	107	133	230	85	57	4	81	530	61	22
Future Volume (vph)	53	34	107	133	230	85	57	4	81	530	61	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00	1.00		0.97	0.91		
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.98		
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (prot)		1687	1776	1509	3273	1776	1509		3273	4736		
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (perm)		1687	1776	1509	3273	1776	1509		3273	4736		
Peak-hour factor, PHF	0.78	0.78	0.83	0.84	0.87	0.81	0.78	0.78	0.81	0.92	0.79	0.78
Adj. Flow (vph)	68	44	129	158	264	105	73	5	100	576	77	28
RTOR Reduction (vph)	0	0	0	146	0	0	72	0	0	4	0	0
Lane Group Flow (vph)	0	112	129	12	264	105	6	0	100	677	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm		Prot	NA		
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases				4			8					
Actuated Green, G (s)		7.0	9.0	9.0	7.0	9.0	9.0		5.0	27.6		
Effective Green, g (s)		7.0	9.0	9.0	7.0	9.0	9.0		5.0	27.6		
Actuated g/C Ratio		0.06	0.08	0.08	0.06	0.08	0.08		0.04	0.23		
Clearance Time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		98	133	113	190	133	113		136	1089		
v/s Ratio Prot		0.07	c0.07		c0.08	0.06			0.03	c0.14		
v/s Ratio Perm				0.01			0.00					
v/c Ratio		1.14	0.97	0.10	1.39	0.79	0.05		0.74	0.62		
Uniform Delay, d1		56.5	55.4	51.7	56.5	54.6	51.5		56.8	41.5		
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2		134.5	67.9	0.4	204.3	26.0	0.2		18.5	2.7		
Delay (s)		191.0	123.3	52.2	260.8	80.5	51.7		75.4	44.2		
Level of Service		F	F	D	F	F	D		E	D		
Approach Delay (s)			114.1			182.0				48.2		
Approach LOS			F			F				D		

Intersection Summary			
HCM 2000 Control Delay	105.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	41.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	50	203	1675	43	9	264	36	46
Future Volume (vph)	50	203	1675	43	9	264	36	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	0.91		1.00	1.00	1.00	
Frt	1.00	1.00	1.00		1.00	1.00	0.85	
Flt Protected	0.95	0.95	1.00		0.95	0.95	1.00	
Satd. Flow (prot)	1687	1687	4826		1687	1687	1509	
Flt Permitted	0.95	0.95	1.00		0.95	0.95	1.00	
Satd. Flow (perm)	1687	1687	4826		1687	1687	1509	
Peak-hour factor, PHF	0.78	0.87	0.93	0.78	0.78	0.88	0.78	0.78
Adj. Flow (vph)	64	233	1801	55	12	300	46	59
RTOR Reduction (vph)	0	0	3	0	0	0	90	0
Lane Group Flow (vph)	64	233	1853	0	12	300	15	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Perm	Perm	Perm	
Protected Phases	1	1	6					
Permitted Phases					9	9	9	
Actuated Green, G (s)	18.4	18.4	41.0		17.0	17.0	17.0	
Effective Green, g (s)	18.4	18.4	41.0		17.0	17.0	17.0	
Actuated g/C Ratio	0.15	0.15	0.34		0.14	0.14	0.14	
Clearance Time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	258	258	1648		238	238	213	
v/s Ratio Prot	0.04	0.14	c0.38					
v/s Ratio Perm					0.01	c0.18	0.01	
v/c Ratio	0.25	0.90	1.12		0.05	1.26	0.07	
Uniform Delay, d1	44.7	49.9	39.5		44.5	51.5	44.6	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5	31.6	64.6		0.1	146.5	0.1	
Delay (s)	45.2	81.6	104.1		44.6	198.0	44.8	
Level of Service	D	F	F		D	F	D	
Approach Delay (s)			99.9			155.0		
Approach LOS			F			F		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	112	159	53	28	12	54	64	47	55	535	6
Future Volume (vph)	4	112	159	53	28	12	54	64	47	55	535	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.983				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.995	
Satd. Flow (prot)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Flt Permitted		0.999			0.972		0.950				0.995	
Satd. Flow (perm)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.83	0.85	0.78	0.78	0.78	0.78	0.79	0.78	0.78	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	5	135	187	68	36	15	69	81	60	71	582	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	119	0	69	81	60	0	661	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	52.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↱		↕	
Traffic Vol, veh/h	4	112	159	53	28	12	54	64	47	55	535	6
Future Vol, veh/h	4	112	159	53	28	12	54	64	47	55	535	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	85	78	78	78	78	79	78	78	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	135	187	68	36	15	69	81	60	71	582	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	973	947	586	1108	951	81	590	0	0	81	0	0
Stage 1	728	728	-	219	219	-	-	-	-	-	-	-
Stage 2	245	219	-	889	732	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	230	259	506	186	258	973	976	-	-	1504	-	-
Stage 1	412	426	-	779	718	-	-	-	-	-	-	-
Stage 2	754	718	-	335	424	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	178	224	506	~ 55	223	973	976	-	-	1504	-	-
Mov Cap-2 Maneuver	178	224	-	~ 55	223	-	-	-	-	-	-	-
Stage 1	383	396	-	724	667	-	-	-	-	-	-	-
Stage 2	653	667	-	129	394	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	86.5	$ 332.7	3	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	976	-	-	84	327	1504	-	-
HCM Lane V/C Ratio	0.071	-	-	1.419	1	0.047	-	-
HCM Control Delay (s)	9	-	-	$ 332.7	86.5	7.5	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	9.2	11.1	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

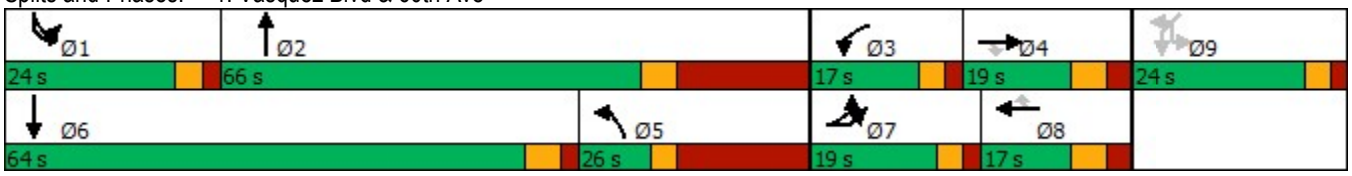
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	94	41	133	150	254	90	141	8	80	1275	93	27
Future Volume (vph)	94	41	133	150	254	90	141	8	80	1275	93	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		0	
Storage Lanes		1		1	2		1		2		0	
Taper Length (ft)		25			25				25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.97	0.91	0.91	0.91
Frt				0.850			0.850			0.985		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1752	1845	1568	3400	1845	1568	0	3400	4960	0	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1752	1845	1568	3400	1845	1568	0	3400	4960	0	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)				269			269			2		
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.82	0.78	0.84	0.85	0.87	0.82	0.84	0.78	0.81	0.93	0.82	0.78
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	115	53	158	176	292	110	168	10	99	1371	113	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	158	176	292	110	178	0	99	1519	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1	1	1	1	1		1	1		
Detector Template	Left	Left	Thru	Right	Left	Thru	Right		Left	Thru		
Leading Detector (ft)	20	40	40	40	40	40	40		40	40		
Trailing Detector (ft)	0	0	0	0	0	0	0		0	0		
Detector 1 Position(ft)	0	0	0	0	0	0	0		0	0		
Detector 1 Size(ft)	20	40	40	40	40	40	40		40	40		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm		Prot	NA		
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases				4			8					
Detector Phase	7	7	4	4	3	8	8		5	2		
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0	8.0	5.0	8.0	8.0		5.0	15.0		
Minimum Split (s)	10.0	10.0	16.0	16.0	10.0	16.0	16.0		23.0	34.0		

Lane Group	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	138	203	1030	48	26	198	25	133
Future Volume (vph)	138	203	1030	48	26	198	25	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		220		0		0	150	
Storage Lanes		2		0		2	1	
Taper Length (ft)		25				25		
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.992				0.850	
Flt Protected	0.950	0.950			0.950	0.950		
Satd. Flow (prot)	1752	1752	4996	0	1752	1752	1568	0
Flt Permitted	0.950	0.950			0.950	0.950		
Satd. Flow (perm)	1752	1752	4996	0	1752	1752	1568	0
Right Turn on Red				Yes				Yes
Satd. Flow (RTOR)			7				284	
Link Speed (mph)			45			30		
Link Distance (ft)			1000			903		
Travel Time (s)			15.2			20.5		
Peak Hour Factor	0.84	0.87	0.93	0.78	0.78	0.86	0.78	0.84
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	164	233	1108	62	33	230	32	158
Shared Lane Traffic (%)								
Lane Group Flow (vph)	164	233	1170	0	33	230	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right
Median Width(ft)			24			24		
Link Offset(ft)			0			0		
Crosswalk Width(ft)			16			16		
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15	15	9	9
Number of Detectors	1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Left	Right	
Leading Detector (ft)	40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0	
Detector 1 Size(ft)	40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Perm	Perm	Perm	
Protected Phases	1	1	6					
Permitted Phases					9	9	9	
Detector Phase	1	1	6		9	9	9	
Switch Phase								
Minimum Initial (s)	5.0	5.0	15.0		10.0	10.0	10.0	
Minimum Split (s)	12.0	12.0	21.0		15.0	15.0	15.0	

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	19.0	19.0	19.0	19.0	17.0	17.0	17.0		26.0	66.0		
Total Split (%)	12.7%	12.7%	12.7%	12.7%	11.3%	11.3%	11.3%		17.3%	44.0%		
Maximum Green (s)	14.0	14.0	12.0	12.0	12.0	10.0	10.0		8.0	47.0		
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0		3.0	4.0		
All-Red Time (s)	2.0	2.0	3.0	3.0	2.0	3.0	3.0		15.0	15.0		
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lag		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Recall Mode	None	None	None	None	None	None	None		None	Max		
Act Effct Green (s)		14.0	12.0	12.0	12.0	10.0	10.0		8.0	47.0		
Actuated g/C Ratio		0.09	0.08	0.08	0.08	0.07	0.07		0.05	0.31		
v/c Ratio		1.03	1.07	0.47	1.07	0.89	0.50		0.55	0.98		
Control Delay		143.1	157.9	4.3	138.2	124.7	5.0		81.0	68.5		
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		143.1	157.9	4.3	138.2	124.7	5.0		81.0	68.5		
LOS		F	F	A	F	F	A		F	E		
Approach Delay			99.1			94.8				69.3		
Approach LOS			F			F				E		

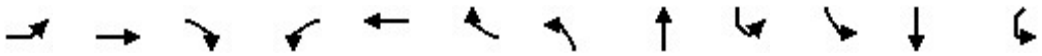
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 72.1		Intersection LOS: E	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Total Split (s)	24.0	24.0	64.0		24.0	24.0	24.0	
Total Split (%)	16.0%	16.0%	42.7%		16.0%	16.0%	16.0%	
Maximum Green (s)	19.0	19.0	58.0		19.0	19.0	19.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lead					
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	Max		None	None	None	
Act Effct Green (s)	19.0	19.0	58.0		19.0	19.0	19.0	
Actuated g/C Ratio	0.13	0.13	0.39		0.13	0.13	0.13	
v/c Ratio	0.74	1.05	0.60		0.15	1.04	0.43	
Control Delay	83.4	136.3	38.2		60.3	133.2	3.0	
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	83.4	136.3	38.2		60.3	133.2	3.0	
LOS	F	F	D		E	F	A	
Approach Delay			57.5			73.2		
Approach LOS			E			E		

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL2	SBL	SBT	SWL2
Lane Group Flow (vph)	168	158	176	292	110	178	99	1519	164	233	1170	33
v/c Ratio	1.03	1.07	0.47	1.07	0.89	0.50	0.55	0.98	0.74	1.05	0.60	0.15
Control Delay	143.1	157.9	4.3	138.2	124.7	5.0	81.0	68.5	83.4	136.3	38.2	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.1	157.9	4.3	138.2	124.7	5.0	81.0	68.5	83.4	136.3	38.2	60.3
Queue Length 50th (ft)	~175	~171	0	~162	109	0	49	539	157	~248	332	29
Queue Length 95th (ft)	#264	#293	0	#248	#200	0	73	#648	#225	#404	382	56
Internal Link Dist (ft)		400			1399			569			920	
Turn Bay Length (ft)			100	220			220		220	220		
Base Capacity (vph)	163	147	372	272	123	355	181	1555	221	221	1936	221
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.07	0.47	1.07	0.89	0.50	0.55	0.98	0.74	1.05	0.60	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SWL	SWR
Lane Group Flow (vph)	230	190
v/c Ratio	1.04	0.43
Control Delay	133.2	3.0
Queue Delay	0.0	0.0
Total Delay	133.2	3.0
Queue Length 50th (ft)	~241	0
Queue Length 95th (ft)	#390	0
Internal Link Dist (ft)	823	
Turn Bay Length (ft)		150
Base Capacity (vph)	221	446
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.43

Intersection Summary

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	94	41	133	150	254	90	141	8	80	1275	93	27
Future Volume (vph)	94	41	133	150	254	90	141	8	80	1275	93	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00	1.00		0.97	0.91		
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.99		
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (prot)		1752	1845	1568	3400	1845	1568		3400	4962		
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		
Satd. Flow (perm)		1752	1845	1568	3400	1845	1568		3400	4962		
Peak-hour factor, PHF	0.82	0.78	0.84	0.85	0.87	0.82	0.84	0.78	0.81	0.93	0.82	0.78
Adj. Flow (vph)	115	53	158	176	292	110	168	10	99	1371	113	35
RTOR Reduction (vph)	0	0	0	162	0	0	166	0	0	1	0	0
Lane Group Flow (vph)	0	168	158	14	292	110	12	0	99	1518	0	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm		Prot	NA		
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases				4			8					
Actuated Green, G (s)		14.0	12.0	12.0	12.0	10.0	10.0		8.0	47.0		
Effective Green, g (s)		14.0	12.0	12.0	12.0	10.0	10.0		8.0	47.0		
Actuated g/C Ratio		0.09	0.08	0.08	0.08	0.07	0.07		0.05	0.31		
Clearance Time (s)		5.0	7.0	7.0	5.0	7.0	7.0		18.0	19.0		
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		163	147	125	272	123	104		181	1554		
v/s Ratio Prot		c0.10	c0.09		0.09	0.06			0.03	c0.31		
v/s Ratio Perm				0.01			0.01					
v/c Ratio		1.03	1.07	0.11	1.07	0.89	0.11		0.55	0.98		
Uniform Delay, d1		68.0	69.0	64.1	69.0	69.5	65.8		69.2	51.0		
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Incremental Delay, d2		78.8	95.6	0.4	75.5	49.8	0.5		3.4	17.9		
Delay (s)		146.8	164.6	64.5	144.5	119.3	66.3		72.6	68.9		
Level of Service		F	F	E	F	F	E		E	E		
Approach Delay (s)			123.5			115.7				69.1		
Approach LOS			F			F				E		

Intersection Summary			
HCM 2000 Control Delay	79.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	41.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	138	203	1030	48	26	198	25	133
Future Volume (vph)	138	203	1030	48	26	198	25	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	0.91		1.00	1.00	1.00	
Frt	1.00	1.00	0.99		1.00	1.00	0.85	
Flt Protected	0.95	0.95	1.00		0.95	0.95	1.00	
Satd. Flow (prot)	1752	1752	4996		1752	1752	1568	
Flt Permitted	0.95	0.95	1.00		0.95	0.95	1.00	
Satd. Flow (perm)	1752	1752	4996		1752	1752	1568	
Peak-hour factor, PHF	0.84	0.87	0.93	0.78	0.78	0.86	0.78	0.84
Adj. Flow (vph)	164	233	1108	62	33	230	32	158
RTOR Reduction (vph)	0	0	4	0	0	0	166	0
Lane Group Flow (vph)	164	233	1166	0	33	230	24	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Perm	Perm	Perm	
Protected Phases	1	1	6					
Permitted Phases					9	9	9	
Actuated Green, G (s)	19.0	19.0	58.0		19.0	19.0	19.0	
Effective Green, g (s)	19.0	19.0	58.0		19.0	19.0	19.0	
Actuated g/C Ratio	0.13	0.13	0.39		0.13	0.13	0.13	
Clearance Time (s)	5.0	5.0	6.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	221	221	1931		221	221	198	
v/s Ratio Prot	0.09	c0.13	0.23					
v/s Ratio Perm					0.02	c0.13	0.02	
v/c Ratio	0.74	1.05	0.60		0.15	1.04	0.12	
Uniform Delay, d1	63.1	65.5	36.8		58.3	65.5	58.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	12.6	75.6	1.4		0.3	71.6	0.3	
Delay (s)	75.7	141.1	38.2		58.6	137.1	58.4	
Level of Service	E	F	D		E	F	E	
Approach Delay (s)			57.4			98.4		
Approach LOS			E			F		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	53	70	61	59	26	127	267	161	20	103	26
Future Volume (vph)	10	53	70	61	59	26	127	267	161	20	103	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.976				0.850		0.976	
Flt Protected		0.996			0.980		0.950				0.993	
Satd. Flow (prot)	0	1660	0	0	1714	0	1703	1792	1524	0	1737	0
Flt Permitted		0.996			0.980		0.950				0.993	
Satd. Flow (perm)	0	1660	0	0	1714	0	1703	1792	1524	0	1737	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.78	0.80	0.79	0.78	0.78	0.84	0.88	0.85	0.78	0.83	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	13	68	88	77	76	33	151	303	189	26	124	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	169	0	0	186	0	151	303	189	0	183	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	13

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	10	53	70	61	59	26	127	267	161	20	103	26
Future Vol, veh/h	10	53	70	61	59	26	127	267	161	20	103	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	80	79	78	78	84	88	85	78	83	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	13	68	88	77	76	33	151	303	189	26	124	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	853	798	141	876	814	303	157	0	0	303	0	0
Stage 1	193	193	-	605	605	-	-	-	-	-	-	-
Stage 2	660	605	-	271	209	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	275	314	896	265	308	727	1399	-	-	1235	-	-
Stage 1	800	733	-	478	481	-	-	-	-	-	-	-
Stage 2	446	481	-	726	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	186	273	896	175	268	727	1399	-	-	1235	-	-
Mov Cap-2 Maneuver	186	273	-	175	268	-	-	-	-	-	-	-
Stage 1	714	716	-	426	429	-	-	-	-	-	-	-
Stage 2	313	429	-	579	705	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	20.1	56.5	1.9	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1399	-	-	242	405	1235	-	-
HCM Lane V/C Ratio	0.108	-	-	0.769	0.415	0.021	-	-
HCM Control Delay (s)	7.9	-	-	56.5	20.1	8	0	-
HCM Lane LOS	A	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	5.6	2	0.1	-	-

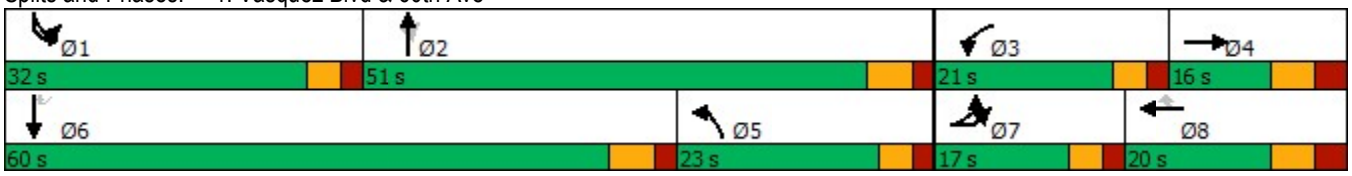
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Future Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.917				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			163				173				127	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.78	0.78	0.83	0.84	0.90	0.83	0.78	0.78	0.81	0.92	0.84	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	71	45	133	163	448	128	76	5	102	641	149	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	296	0	448	128	81	0	102	641	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	62	47
Future Volume (vph)	52	209	1995	62	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.995		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1687	1687	4823	0	1536
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1687	1687	4823	0	1536
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			6		293
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.78	0.87	0.95	0.79	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Adj. Flow (vph)	67	240	2100	78	60
Shared Lane Traffic (%)					
Lane Group Flow (vph)	67	240	2178	0	60
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	17.0	17.0	16.0		21.0	20.0	20.0		23.0	51.0	51.0	
Total Split (%)	14.2%	14.2%	13.3%		17.5%	16.7%	16.7%		19.2%	42.5%	42.5%	
Maximum Green (s)	12.0	12.0	9.0		16.0	13.0	13.0		18.0	45.0	45.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		11.1	8.8		16.0	13.7	13.7		12.1	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
v/c Ratio		0.71	0.76		0.98	0.60	0.24		0.29	0.33	0.26	
Control Delay		74.1	37.0		86.0	61.8	1.7		48.6	25.0	9.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		74.1	37.0		86.0	61.8	1.7		48.6	25.0	9.2	
LOS		E	D		F	E	A		D	C	A	
Approach Delay			47.5			70.9				24.6		
Approach LOS			D			E				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 114.1			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 42.7		Intersection LOS: D	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	32.0	32.0	60.0		60.0
Total Split (%)	26.7%	26.7%	50.0%		50.0%
Maximum Green (s)	27.0	27.0	54.0		54.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
v/c Ratio	0.22	0.78	0.95		0.07
Control Delay	40.8	62.3	40.0		0.1
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	40.8	62.3	40.0		0.1
LOS	D	E	D		A
Approach Delay			42.1		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	116	296	448	128	81	102	641	178	67	240	2178	60
v/c Ratio	0.71	0.76	0.98	0.60	0.24	0.29	0.33	0.26	0.22	0.78	0.95	0.07
Control Delay	74.1	37.0	86.0	61.8	1.7	48.6	25.0	9.2	40.8	62.3	40.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	37.0	86.0	61.8	1.7	48.6	25.0	9.2	40.8	62.3	40.0	0.1
Queue Length 50th (ft)	83	50	171	91	0	36	119	23	42	169	547	0
Queue Length 95th (ft)	130	87	#296	150	0	56	163	64	71	249	#739	0
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	177	394	459	213	333	517	1931	677	400	400	2289	882
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.75	0.98	0.60	0.24	0.20	0.33	0.26	0.17	0.60	0.95	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Future Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1687	3095		3273	1776	1509		3273	4848	1509	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1687	3095		3273	1776	1509		3273	4848	1509	
Peak-hour factor, PHF	0.78	0.78	0.83	0.84	0.90	0.83	0.78	0.78	0.81	0.92	0.84	0.78
Adj. Flow (vph)	71	45	133	163	448	128	76	5	102	641	149	29
RTOR Reduction (vph)	0	0	150	0	0	0	71	0	0	0	76	0
Lane Group Flow (vph)	0	116	146	0	448	128	10	0	102	641	102	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		11.1	8.8		16.0	13.7	13.7		12.2	45.5	45.5	
Effective Green, g (s)		11.1	8.8		16.0	13.7	13.7		12.2	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		164	238		458	213	181		349	1933	601	
v/s Ratio Prot		0.07	0.05		c0.14	c0.07			0.03	c0.13		
v/s Ratio Perm							0.01				0.07	
v/c Ratio		0.71	0.61		0.98	0.60	0.05		0.29	0.33	0.17	
Uniform Delay, d1		49.9	51.0		48.9	47.6	44.5		47.0	23.8	22.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		13.0	4.6		36.0	4.7	0.1		0.5	0.5	0.6	
Delay (s)		63.0	55.6		84.8	52.3	44.6		47.4	24.2	22.7	
Level of Service		E	E		F	D	D		D	C	C	
Approach Delay (s)			57.7			73.5				26.5		
Approach LOS			E			E				C		

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	62	47
Future Volume (vph)	52	209	1995	62	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1687	1687	4822		1536
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1687	1687	4822		1536
Peak-hour factor, PHF	0.78	0.87	0.95	0.79	0.78
Adj. Flow (vph)	67	240	2100	78	60
RTOR Reduction (vph)	0	0	3	0	32
Lane Group Flow (vph)	67	240	2175	0	28
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	20.8	20.8	54.1		54.1
Effective Green, g (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	307	307	2286		728
v/s Ratio Prot	0.04	0.14	c0.45		
v/s Ratio Perm					0.02
v/c Ratio	0.22	0.78	0.95		0.04
Uniform Delay, d1	39.7	44.5	28.7		16.1
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	12.2	10.4		0.1
Delay (s)	40.1	56.7	39.2		16.2
Level of Service	D	E	D		B
Approach Delay (s)			40.9		
Approach LOS			D		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	115	164	55	29	12	58	66	48	57	550	6
Future Volume (vph)	4	115	164	55	29	12	58	66	48	57	550	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.984				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.995	
Satd. Flow (prot)	0	1685	0	0	1747	0	1736	1827	1553	0	1814	0
Flt Permitted		0.999			0.972		0.950				0.995	
Satd. Flow (perm)	0	1685	0	0	1747	0	1736	1827	1553	0	1814	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.83	0.85	0.78	0.78	0.78	0.78	0.79	0.78	0.78	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	5	139	193	71	37	15	74	84	62	73	598	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	0	123	0	74	84	62	0	679	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	71.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	4	115	164	55	29	12	58	66	48	57	550	6
Future Vol, veh/h	4	115	164	55	29	12	58	66	48	57	550	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	85	78	78	78	78	79	78	78	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	139	193	71	37	15	74	84	62	73	598	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1006	980	602	1146	984	84	606	0	0	84	0	0
Stage 1	748	748	-	232	232	-	-	-	-	-	-	-
Stage 2	258	232	-	914	752	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	218	248	496	175	246	970	962	-	-	1500	-	-
Stage 1	401	417	-	766	709	-	-	-	-	-	-	-
Stage 2	742	709	-	325	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	165	212	496	~ 46	211	970	962	-	-	1500	-	-
Mov Cap-2 Maneuver	165	212	-	~ 46	211	-	-	-	-	-	-	-
Stage 1	370	387	-	707	654	-	-	-	-	-	-	-
Stage 2	636	654	-	118	385	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	108.8	$ 479.2	3.1	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	962	-	-	71	314	1500	-	-
HCM Lane V/C Ratio	0.077	-	-	1.733	1.072	0.049	-	-
HCM Control Delay (s)	9.1	-	-	$ 479.2	108.8	7.5	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	10.8	12.7	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

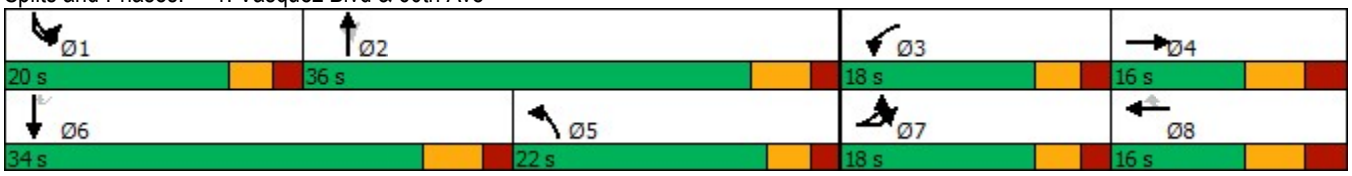
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Future Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.921				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1752	3228	0	3400	1845	1568	0	3400	5036	1568	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1752	3228	0	3400	1845	1568	0	3400	5036	1568	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			182				230				170	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.82	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	118	54	163	182	436	128	173	10	101	1505	252	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	345	0	436	128	183	0	101	1505	288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	62	137
Future Volume (vph)	142	209	1285	62	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.992		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1752	1752	4996	0	1596
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1752	1752	4996	0	1596
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			10		182
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.84	0.87	0.93	0.79	0.84
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Adj. Flow (vph)	169	240	1382	78	163
Shared Lane Traffic (%)					
Lane Group Flow (vph)	169	240	1460	0	163
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	18.0	18.0	16.0		18.0	16.0	16.0		22.0	36.0	36.0	
Total Split (%)	20.0%	20.0%	17.8%		20.0%	17.8%	17.8%		24.4%	40.0%	40.0%	
Maximum Green (s)	13.0	13.0	9.0		13.0	9.0	9.0		17.0	30.0	30.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		12.0	8.7		13.0	9.7	9.7		14.7	30.0	30.0	
Actuated g/C Ratio		0.13	0.10		0.15	0.11	0.11		0.16	0.34	0.34	
v/c Ratio		0.73	0.72		0.88	0.64	0.49		0.18	0.89	0.45	
Control Delay		56.0	27.8		58.1	54.9	7.1		31.7	36.0	12.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		56.0	27.8		58.1	54.9	7.1		31.7	36.0	12.1	
LOS		E	C		E	D	A		C	D	B	
Approach Delay			37.2			45.1				32.1		
Approach LOS			D			D				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	20.0	20.0	34.0		34.0
Total Split (%)	22.2%	22.2%	37.8%		37.8%
Maximum Green (s)	15.0	15.0	28.0		28.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.36		0.36
v/c Ratio	0.60	0.85	0.81		0.24
Control Delay	44.3	63.6	32.2		3.8
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	44.3	63.6	32.2		3.8
LOS	D	E	C		A
Approach Delay			37.3		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	172	345	436	128	183	101	1505	288	169	240	1460	163
v/c Ratio	0.73	0.72	0.88	0.64	0.49	0.18	0.89	0.45	0.60	0.85	0.81	0.24
Control Delay	56.0	27.8	58.1	54.9	7.1	31.7	36.0	12.1	44.3	63.6	32.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	27.8	58.1	54.9	7.1	31.7	36.0	12.1	44.3	63.6	32.2	3.8
Queue Length 50th (ft)	94	46	127	72	0	24	294	48	90	133	291	0
Queue Length 95th (ft)	137	81	#210	#134	22	42	#384	109	143	#243	#389	27
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	255	489	496	200	375	649	1695	641	295	295	1798	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.71	0.88	0.64	0.49	0.16	0.89	0.45	0.57	0.81	0.81	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Future Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	3228		3400	1845	1568		3400	5036	1568	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1752	3228		3400	1845	1568		3400	5036	1568	
Peak-hour factor, PHF	0.82	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Adj. Flow (vph)	118	54	163	182	436	128	173	10	101	1505	252	36
RTOR Reduction (vph)	0	0	164	0	0	0	163	0	0	0	111	0
Lane Group Flow (vph)	0	172	181	0	436	128	20	0	101	1505	177	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		12.0	8.7		13.0	9.7	9.7		13.5	31.1	31.1	
Effective Green, g (s)		12.0	8.7		13.0	9.7	9.7		13.5	31.1	31.1	
Actuated g/C Ratio		0.13	0.10		0.14	0.11	0.11		0.15	0.34	0.34	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		233	311		490	198	168		508	1736	540	
v/s Ratio Prot		0.10	0.06		c0.13	c0.07			0.03	c0.30		
v/s Ratio Perm							0.01				0.11	
v/c Ratio		0.74	0.58		0.89	0.65	0.12		0.20	0.87	0.33	
Uniform Delay, d1		37.6	39.0		37.9	38.6	36.4		33.6	27.6	21.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.5	2.7		17.7	7.1	0.3		0.2	6.1	1.6	
Delay (s)		49.1	41.8		55.6	45.7	36.7		33.8	33.7	23.4	
Level of Service		D	D		E	D	D		C	C	C	
Approach Delay (s)			44.2			49.2				32.2		
Approach LOS			D			D				C		

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	62	137
Future Volume (vph)	142	209	1285	62	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1752	1752	4996		1596
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1752	1752	4996		1596
Peak-hour factor, PHF	0.84	0.87	0.93	0.79	0.84
Adj. Flow (vph)	169	240	1382	78	163
RTOR Reduction (vph)	0	0	6	0	105
Lane Group Flow (vph)	169	240	1454	0	58
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	14.4	14.4	32.0		32.0
Effective Green, g (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.35		0.35
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	279	279	1772		566
v/s Ratio Prot	0.10	0.14	c0.29		
v/s Ratio Perm					0.04
v/c Ratio	0.61	0.86	0.82		0.10
Uniform Delay, d1	35.3	36.9	26.5		19.5
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.7	22.7	4.4		0.4
Delay (s)	38.9	59.6	30.9		19.8
Level of Service	D	E	C		B
Approach Delay (s)			35.3		
Approach LOS			D		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	55	72	63	61	27	131	275	166	21	106	27
Future Volume (vph)	10	55	72	63	61	27	131	275	166	21	106	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.975				0.850		0.975	
Flt Protected		0.996			0.980		0.950				0.993	
Satd. Flow (prot)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.980		0.950				0.993	
Satd. Flow (perm)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.78	0.80	0.79	0.79	0.78	0.84	0.88	0.85	0.78	0.83	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	13	71	90	80	77	35	156	313	195	27	128	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	0	192	0	156	313	195	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	15.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	55	72	63	61	27	131	275	166	21	106	27
Future Vol, veh/h	10	55	72	63	61	27	131	275	166	21	106	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	80	79	79	78	84	88	85	78	83	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	13	71	90	80	77	35	156	313	195	27	128	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	881	825	146	905	842	313	163	0	0	313	0	0
Stage 1	200	200	-	625	625	-	-	-	-	-	-	-
Stage 2	681	625	-	280	217	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	263	303	891	253	296	718	1392	-	-	1225	-	-
Stage 1	793	728	-	466	471	-	-	-	-	-	-	-
Stage 2	434	471	-	718	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	263	891	163	257	718	1392	-	-	1225	-	-
Mov Cap-2 Maneuver	174	263	-	163	257	-	-	-	-	-	-	-
Stage 1	704	711	-	414	418	-	-	-	-	-	-	-
Stage 2	299	418	-	568	699	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	21.3	69.2	1.9	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1392	-	-	229	391	1225	-	-
HCM Lane V/C Ratio	0.112	-	-	0.837	0.443	0.022	-	-
HCM Control Delay (s)	7.9	-	-	69.2	21.3	8	0	-
HCM Lane LOS	A	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	6.5	2.2	0.1	-	-

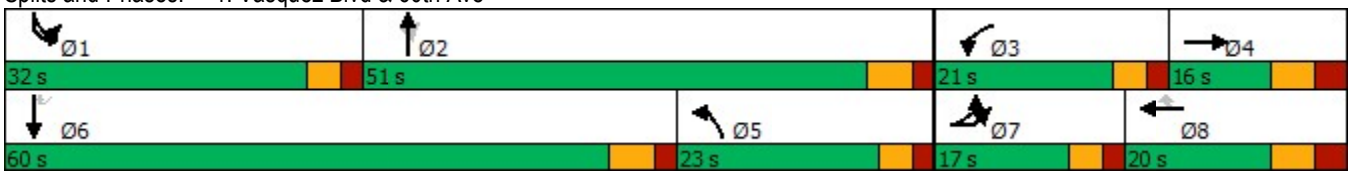
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Future Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.917				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			167				173				127	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.78	0.78	0.83	0.84	0.90	0.83	0.79	0.78	0.82	0.92	0.84	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	74	46	134	167	448	134	75	5	120	641	149	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	301	0	448	134	80	0	120	641	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	78	47
Future Volume (vph)	52	209	1995	78	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.993		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1687	1687	4814	0	1536
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1687	1687	4814	0	1536
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			8		289
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.78	0.87	0.95	0.80	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Adj. Flow (vph)	67	240	2100	98	60
Shared Lane Traffic (%)					
Lane Group Flow (vph)	67	240	2198	0	60
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	17.0	17.0	16.0		21.0	20.0	20.0		23.0	51.0	51.0	
Total Split (%)	14.2%	14.2%	13.3%		17.5%	16.7%	16.7%		19.2%	42.5%	42.5%	
Maximum Green (s)	12.0	12.0	9.0		16.0	13.0	13.0		18.0	45.0	45.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.6	45.6	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
v/c Ratio		0.73	0.77		0.98	0.64	0.24		0.34	0.33	0.26	
Control Delay		75.5	37.0		86.2	63.8	1.7		49.4	25.0	9.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		75.5	37.0		86.2	63.8	1.7		49.4	25.0	9.2	
LOS		E	D		F	E	A		D	C	A	
Approach Delay			48.0			71.5				25.1		
Approach LOS			D			E				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 114.2			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 43.7		Intersection LOS: D	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	32.0	32.0	60.0		60.0
Total Split (%)	26.7%	26.7%	50.0%		50.0%
Maximum Green (s)	27.0	27.0	54.0		54.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
v/c Ratio	0.22	0.78	0.96		0.07
Control Delay	40.8	62.4	41.6		0.1
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	40.8	62.4	41.6		0.1
LOS	D	E	D		A
Approach Delay			43.6		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	120	301	448	134	80	120	641	178	67	240	2198	60
v/c Ratio	0.73	0.77	0.98	0.64	0.24	0.34	0.33	0.26	0.22	0.78	0.96	0.07
Control Delay	75.5	37.0	86.2	63.8	1.7	49.4	25.0	9.2	40.8	62.4	41.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	37.0	86.2	63.8	1.7	49.4	25.0	9.2	40.8	62.4	41.6	0.1
Queue Length 50th (ft)	86	51	171	96	0	42	119	23	42	169	556	0
Queue Length 95th (ft)	#137	88	#296	#164	0	65	163	64	71	249	#752	0
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	177	398	459	211	331	516	1933	678	399	399	2284	879
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.76	0.98	0.64	0.24	0.23	0.33	0.26	0.17	0.60	0.96	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Future Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1687	3093		3273	1776	1509		3273	4848	1509	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1687	3093		3273	1776	1509		3273	4848	1509	
Peak-hour factor, PHF	0.78	0.78	0.83	0.84	0.90	0.83	0.79	0.78	0.82	0.92	0.84	0.78
Adj. Flow (vph)	74	46	134	167	448	134	75	5	120	641	149	29
RTOR Reduction (vph)	0	0	154	0	0	0	70	0	0	0	76	0
Lane Group Flow (vph)	0	120	147	0	448	134	10	0	120	641	102	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.5	45.5	
Effective Green, g (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		165	238		458	211	179		349	1933	601	
v/s Ratio Prot		0.07	0.05		c0.14	c0.08			0.04	c0.13		
v/s Ratio Perm							0.01				0.07	
v/c Ratio		0.73	0.62		0.98	0.64	0.05		0.34	0.33	0.17	
Uniform Delay, d1		50.0	51.0		48.9	47.9	44.5		47.2	23.8	22.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		14.8	4.7		36.0	6.1	0.1		0.6	0.5	0.6	
Delay (s)		64.7	55.7		84.8	54.0	44.7		47.8	24.2	22.7	
Level of Service		E	E		F	D	D		D	C	C	
Approach Delay (s)			58.3			73.7				27.0		
Approach LOS			E			E				C		

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	78	47
Future Volume (vph)	52	209	1995	78	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1687	1687	4815		1536
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1687	1687	4815		1536
Peak-hour factor, PHF	0.78	0.87	0.95	0.80	0.78
Adj. Flow (vph)	67	240	2100	98	60
RTOR Reduction (vph)	0	0	4	0	32
Lane Group Flow (vph)	67	240	2194	0	28
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	20.8	20.8	54.1		54.1
Effective Green, g (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	307	307	2283		728
v/s Ratio Prot	0.04	0.14	c0.46		
v/s Ratio Perm					0.02
v/c Ratio	0.22	0.78	0.96		0.04
Uniform Delay, d1	39.7	44.5	29.0		16.1
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	12.2	11.7		0.1
Delay (s)	40.1	56.7	40.6		16.2
Level of Service	D	E	D		B
Approach Delay (s)			42.2		
Approach LOS			D		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	117	164	56	30	13	56	66	53	60	550	6
Future Volume (vph)	4	117	164	56	30	13	56	66	53	60	550	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.982				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.994	
Satd. Flow (prot)	0	1685	0	0	1744	0	1736	1827	1553	0	1812	0
Flt Permitted		0.999			0.972		0.950				0.994	
Satd. Flow (perm)	0	1685	0	0	1744	0	1736	1827	1553	0	1812	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.83	0.85	0.78	0.78	0.78	0.78	0.79	0.78	0.79	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	5	141	193	72	38	17	72	84	68	76	598	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	0	127	0	72	84	68	0	682	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	78.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	4	117	164	56	30	13	56	66	53	60	550	6
Future Vol, veh/h	4	117	164	56	30	13	56	66	53	60	550	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	85	78	78	78	78	79	78	79	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	141	193	72	38	17	72	84	68	76	598	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1010	982	602	1149	986	84	606	0	0	84	0	0
Stage 1	754	754	-	228	228	-	-	-	-	-	-	-
Stage 2	256	228	-	921	758	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	217	247	496	174	246	970	962	-	-	1500	-	-
Stage 1	398	414	-	770	712	-	-	-	-	-	-	-
Stage 2	744	712	-	322	412	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	163	211	496	~ 44	210	970	962	-	-	1500	-	-
Mov Cap-2 Maneuver	163	211	-	~ 44	210	-	-	-	-	-	-	-
Stage 1	368	383	-	712	659	-	-	-	-	-	-	-
Stage 2	637	659	-	115	381	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	114.9	$ 526.9	2.9	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	962	-	-	69	311	1500	-	-
HCM Lane V/C Ratio	0.075	-	-	1.839	1.09	0.051	-	-
HCM Control Delay (s)	9	-	-	$ 526.9	114.9	7.5	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	11.4	13.2	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	222	9	32	96	2	7
Future Volume (vph)	222	9	32	96	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.899	
Flt Protected				0.987	0.988	
Satd. Flow (prot)	1889	0	0	1828	1570	0
Flt Permitted				0.987	0.988	
Satd. Flow (perm)	1889	0	0	1828	1570	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	1053			223	199	
Travel Time (s)	23.9			5.1	6.8	
Peak Hour Factor	0.87	0.78	0.78	0.82	0.78	0.78
Heavy Vehicles (%)	0%	0%	10%	0%	0%	10%
Adj. Flow (vph)	255	12	41	117	3	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	267	0	0	158	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	222	9	32	96	2	7
Future Vol, veh/h	222	9	32	96	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	78	78	82	78	78
Heavy Vehicles, %	0	0	10	0	0	10
Mvmt Flow	255	12	41	117	3	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	267	0	460	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	-	-	4.2	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.39
Pot Cap-1 Maneuver	-	-	1252	-	563	759
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1252	-	543	759
Mov Cap-2 Maneuver	-	-	-	-	543	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	810	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	697	1252	-	-	-
HCM Lane V/C Ratio	0.017	0.033	-	-	-
HCM Control Delay (s)	10.3	8	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	228	1	4	128	1	1
Future Volume (vph)	228	1	4	128	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.932	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	1898	0	0	1890	1646	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	1898	0	0	1890	1646	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	49			712	152	
Travel Time (s)	1.1			16.2	3.5	
Peak Hour Factor	0.87	0.78	0.78	0.84	0.78	0.78
Heavy Vehicles (%)	0%	0%	10%	0%	0%	10%
Adj. Flow (vph)	262	1	5	152	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	263	0	0	157	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	228	1	4	128	1	1
Future Vol, veh/h	228	1	4	128	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	78	78	84	78	78
Heavy Vehicles, %	0	0	10	0	0	10
Mvmt Flow	262	1	5	152	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	263	0	425	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	-	-	4.2	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.39
Pot Cap-1 Maneuver	-	-	1256	-	590	757
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1256	-	588	757
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	662	-	-	1256	-
HCM Lane V/C Ratio	0.004	-	-	0.004	-
HCM Control Delay (s)	10.5	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

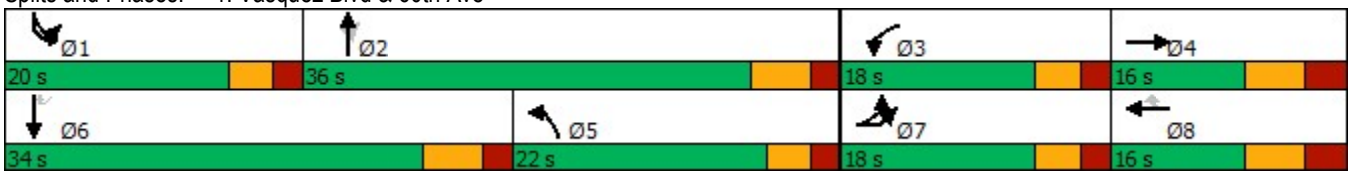
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Future Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.919				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1752	3221	0	3400	1845	1568	0	3400	5036	1568	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1752	3221	0	3400	1845	1568	0	3400	5036	1568	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			201				230				170	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.83	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	134	58	169	201	436	129	173	10	106	1505	252	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	370	0	436	129	183	0	106	1505	288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	66	137
Future Volume (vph)	142	209	1285	66	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.991		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1752	1752	4991	0	1596
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1752	1752	4991	0	1596
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			11		182
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.84	0.87	0.93	0.79	0.84
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Adj. Flow (vph)	169	240	1382	84	163
Shared Lane Traffic (%)					
Lane Group Flow (vph)	169	240	1466	0	163
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	18.0	18.0	16.0		18.0	16.0	16.0		22.0	36.0	36.0	
Total Split (%)	20.0%	20.0%	17.8%		20.0%	17.8%	17.8%		24.4%	40.0%	40.0%	
Maximum Green (s)	13.0	13.0	9.0		13.0	9.0	9.0		17.0	30.0	30.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		12.4	8.8		13.0	9.4	9.4		14.7	30.0	30.0	
Actuated g/C Ratio		0.14	0.10		0.15	0.11	0.11		0.16	0.34	0.34	
v/c Ratio		0.79	0.74		0.88	0.66	0.49		0.19	0.89	0.45	
Control Delay		61.2	27.8		58.3	56.9	7.3		31.9	36.2	12.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		61.2	27.8		58.3	56.9	7.3		31.9	36.2	12.1	
LOS		E	C		E	E	A		C	D	B	
Approach Delay			39.2			45.6				32.3		
Approach LOS			D			D				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 35.9		Intersection LOS: D	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	20.0	20.0	34.0		34.0
Total Split (%)	22.2%	22.2%	37.8%		37.8%
Maximum Green (s)	15.0	15.0	28.0		28.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.36		0.36
v/c Ratio	0.60	0.85	0.82		0.24
Control Delay	44.4	63.8	32.4		3.8
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	44.4	63.8	32.4		3.8
LOS	D	E	C		A
Approach Delay			37.5		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	192	370	436	129	183	106	1505	288	169	240	1466	163
v/c Ratio	0.79	0.74	0.88	0.66	0.49	0.19	0.89	0.45	0.60	0.85	0.82	0.24
Control Delay	61.2	27.8	58.3	56.9	7.3	31.9	36.2	12.1	44.4	63.8	32.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	27.8	58.3	56.9	7.3	31.9	36.2	12.1	44.4	63.8	32.4	3.8
Queue Length 50th (ft)	106	48	127	72	0	26	294	48	90	133	293	0
Queue Length 95th (ft)	#162	84	#210	#135	22	43	#384	109	143	#243	#392	27
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	255	506	495	195	371	648	1693	640	295	295	1795	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.73	0.88	0.66	0.49	0.16	0.89	0.45	0.57	0.81	0.82	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Future Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	3219		3400	1845	1568		3400	5036	1568	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1752	3219		3400	1845	1568		3400	5036	1568	
Peak-hour factor, PHF	0.83	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Adj. Flow (vph)	134	58	169	201	436	129	173	10	106	1505	252	36
RTOR Reduction (vph)	0	0	181	0	0	0	164	0	0	0	111	0
Lane Group Flow (vph)	0	192	189	0	436	129	19	0	106	1505	177	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		12.4	8.8		13.0	9.4	9.4		13.5	31.1	31.1	
Effective Green, g (s)		12.4	8.8		13.0	9.4	9.4		13.5	31.1	31.1	
Actuated g/C Ratio		0.14	0.10		0.14	0.10	0.10		0.15	0.34	0.34	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		240	313		489	192	163		508	1734	540	
v/s Ratio Prot		0.11	0.06		c0.13	c0.07			0.03	c0.30		
v/s Ratio Perm							0.01				0.11	
v/c Ratio		0.80	0.60		0.89	0.67	0.12		0.21	0.87	0.33	
Uniform Delay, d1		37.7	39.1		38.0	39.0	36.7		33.7	27.7	21.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		17.1	3.3		18.2	8.9	0.3		0.2	6.2	1.6	
Delay (s)		54.9	42.3		56.1	47.9	37.0		33.9	33.9	23.5	
Level of Service		D	D		E	D	D		C	C	C	
Approach Delay (s)			46.6			50.0				32.3		
Approach LOS			D			D				C		

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	66	137
Future Volume (vph)	142	209	1285	66	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1752	1752	4993		1596
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1752	1752	4993		1596
Peak-hour factor, PHF	0.84	0.87	0.93	0.79	0.84
Adj. Flow (vph)	169	240	1382	84	163
RTOR Reduction (vph)	0	0	7	0	105
Lane Group Flow (vph)	169	240	1459	0	58
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	14.4	14.4	32.0		32.0
Effective Green, g (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.35		0.35
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	279	279	1769		565
v/s Ratio Prot	0.10	0.14	c0.29		
v/s Ratio Perm					0.04
v/c Ratio	0.61	0.86	0.82		0.10
Uniform Delay, d1	35.3	37.0	26.6		19.5
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.7	22.7	4.5		0.4
Delay (s)	39.0	59.6	31.1		19.9
Level of Service	D	E	C		B
Approach Delay (s)			35.5		
Approach LOS			D		

Intersection Summary

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	56	72	68	64	30	131	275	167	22	106	27
Future Volume (vph)	10	56	72	68	64	30	131	275	167	22	106	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.931			0.975				0.850		0.975	
Flt Protected		0.996			0.979		0.950				0.993	
Satd. Flow (prot)	0	1662	0	0	1711	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.979		0.950				0.993	
Satd. Flow (perm)	0	1662	0	0	1711	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.78	0.80	0.79	0.79	0.78	0.84	0.88	0.85	0.78	0.83	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	13	72	90	86	81	38	156	313	196	28	128	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	205	0	156	313	196	0	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	18

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	10	56	72	68	64	30	131	275	167	22	106	27
Future Vol, veh/h	10	56	72	68	64	30	131	275	167	22	106	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	80	79	79	78	84	88	85	78	83	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	13	72	90	86	81	38	156	313	196	28	128	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	887	827	146	908	844	313	163	0	0	313	0	0
Stage 1	202	202	-	625	625	-	-	-	-	-	-	-
Stage 2	685	625	-	283	219	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	260	302	891	252	296	718	1392	-	-	1225	-	-
Stage 1	791	727	-	466	471	-	-	-	-	-	-	-
Stage 2	432	471	-	715	714	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	168	262	891	161	256	718	1392	-	-	1225	-	-
Mov Cap-2 Maneuver	168	262	-	161	256	-	-	-	-	-	-	-
Stage 1	702	709	-	414	418	-	-	-	-	-	-	-
Stage 2	293	418	-	563	696	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	21.7	82.8	1.9	1.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1392	-	-	227	387	1225	-	-
HCM Lane V/C Ratio	0.112	-	-	0.906	0.451	0.023	-	-
HCM Control Delay (s)	7.9	-	-	82.8	21.7	8	0	-
HCM Lane LOS	A	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	7.5	2.3	0.1	-	-

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	241	3	9	151	10	33
Future Volume (vph)	241	3	9	151	10	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.897	
Flt Protected				0.997	0.988	
Satd. Flow (prot)	1896	0	0	1882	1564	0
Flt Permitted				0.997	0.988	
Satd. Flow (perm)	1896	0	0	1882	1564	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	1053			223	199	
Travel Time (s)	23.9			5.1	6.8	
Peak Hour Factor	0.87	0.78	0.78	0.85	0.78	0.78
Heavy Vehicles (%)	0%	0%	10%	0%	0%	10%
Adj. Flow (vph)	277	4	12	178	13	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	190	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	241	3	9	151	10	33
Future Vol, veh/h	241	3	9	151	10	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	78	78	85	78	78
Heavy Vehicles, %	0	0	10	0	0	10
Mvmt Flow	277	4	12	178	13	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	481	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	4.2	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.39
Pot Cap-1 Maneuver	-	-	1237	-	548	741
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1237	-	542	741
Mov Cap-2 Maneuver	-	-	-	-	542	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	828	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.5	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	683	1237	-	-	-
HCM Lane V/C Ratio	0.081	0.009	-	-	-
HCM Control Delay (s)	10.7	7.9	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	274	1	1	159	1	4
Future Volume (vph)	274	1	1	159	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.887	
Flt Protected					0.992	
Satd. Flow (prot)	1900	0	0	1899	1543	0
Flt Permitted					0.992	
Satd. Flow (perm)	1900	0	0	1899	1543	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	49			712	152	
Travel Time (s)	1.1			16.2	3.5	
Peak Hour Factor	0.88	0.78	0.78	0.85	0.78	0.78
Heavy Vehicles (%)	0%	0%	10%	0%	0%	10%
Adj. Flow (vph)	311	1	1	187	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	312	0	0	188	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

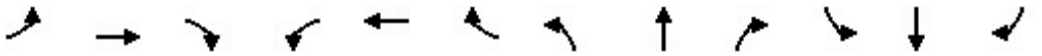
Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	274	1	1	159	1	4
Future Vol, veh/h	274	1	1	159	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	78	78	85	78	78
Heavy Vehicles, %	0	0	10	0	0	10
Mvmt Flow	311	1	1	187	1	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	312	0	501	312
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.2	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.29	-	3.5	3.39
Pot Cap-1 Maneuver	-	-	1204	-	533	710
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1204	-	532	710
Mov Cap-2 Maneuver	-	-	-	-	532	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	847	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	665	-	-	1204	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.5	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	165	169	550	139	130	103	760	121	322	2375	70
Future Volume (vph)	81	165	169	550	139	130	103	760	121	322	2375	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	220		0	220		220	220		0
Storage Lanes	1		0	2		1	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	0.97	0.86	1.00	0.97	0.86	0.86
Frt		0.924				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	3117	0	3273	1776	1509	3273	6108	1509	3273	6078	0
Flt Permitted	0.653			0.226			0.950			0.950		
Satd. Flow (perm)	1160	3117	0	779	1776	1509	3273	6108	1509	3273	6078	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192				155			159		6	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		480			657			649			1000	
Travel Time (s)		9.4			12.8			9.8			15.2	
Peak Hour Factor	0.81	0.85	0.85	0.92	0.84	0.84	0.83	0.92	0.83	0.89	0.95	0.80
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	100	194	199	598	165	155	124	826	146	362	2500	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	393	0	598	165	155	124	826	146	362	2588	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		40	40	40	40	40	40	40	40	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	23.0	39.0		20.0	36.0	36.0	18.0	44.0	44.0	27.0	53.0	
Total Split (%)	17.7%	30.0%		15.4%	27.7%	27.7%	13.8%	33.8%	33.8%	20.8%	40.8%	
Maximum Green (s)	18.0	32.0		15.0	29.0	29.0	13.0	38.0	38.0	22.0	47.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0		5.0	7.0	7.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	25.4	13.2		34.2	18.1	18.1	9.5	39.9	39.9	16.9	47.3	
Actuated g/C Ratio	0.23	0.12		0.32	0.17	0.17	0.09	0.37	0.37	0.16	0.44	
v/c Ratio	0.31	0.72		1.01	0.56	0.41	0.43	0.37	0.22	0.71	0.97	
Control Delay	29.2	30.6		71.3	50.0	10.0	52.5	26.5	4.5	51.8	42.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.2	30.6		71.3	50.0	10.0	52.5	26.5	4.5	51.8	42.8	
LOS	C	C		E	D	A	D	C	A	D	D	
Approach Delay		30.3			57.1			26.5			43.9	
Approach LOS		C			E			C			D	

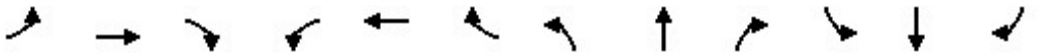
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 108.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 41.4		Intersection LOS: D	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	100	393	598	165	155	124	826	146	362	2588
v/c Ratio	0.31	0.72	1.01	0.56	0.41	0.43	0.37	0.22	0.71	0.97
Control Delay	29.2	30.6	71.3	50.0	10.0	52.5	26.5	4.5	51.8	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	30.6	71.3	50.0	10.0	52.5	26.5	4.5	51.8	42.8
Queue Length 50th (ft)	49	69	174	105	0	42	118	0	122	491
Queue Length 95th (ft)	82	112	#305	172	47	71	176	29	180	#711
Internal Link Dist (ft)		400		577			569			920
Turn Bay Length (ft)	100		220			220		220	220	
Base Capacity (vph)	445	1060	593	478	519	394	2252	656	668	2660
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.37	1.01	0.35	0.30	0.31	0.37	0.22	0.54	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	165	169	550	139	130	103	760	121	322	2375	70
Future Volume (veh/h)	81	165	169	550	139	130	103	760	121	322	2375	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	100	194	199	598	165	0	124	826	146	362	2500	88
Peak Hour Factor	0.81	0.85	0.85	0.92	0.84	0.84	0.83	0.92	0.83	0.89	0.95	0.80
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	358	269	240	651	415		185	2208	544	443	2687	94
Arrive On Green	0.07	0.16	0.16	0.14	0.23	0.00	0.06	0.36	0.36	0.13	0.44	0.44
Sat Flow, veh/h	1711	1706	1522	3319	1796	1522	3319	6179	1522	3319	6175	217
Grp Volume(v), veh/h	100	194	199	598	165	0	124	826	146	362	1875	713
Grp Sat Flow(s),veh/h/ln	1711	1706	1522	1659	1796	1522	1659	1545	1522	1659	1545	1757
Q Serve(g_s), s	5.2	11.7	13.7	15.0	8.4	0.0	4.0	10.7	7.4	11.5	41.5	41.6
Cycle Q Clear(g_c), s	5.2	11.7	13.7	15.0	8.4	0.0	4.0	10.7	7.4	11.5	41.5	41.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	358	269	240	651	415		185	2208	544	443	2017	765
V/C Ratio(X)	0.28	0.72	0.83	0.92	0.40		0.67	0.37	0.27	0.82	0.93	0.93
Avail Cap(c_a), veh/h	532	506	451	651	482		399	2208	544	676	2017	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	43.3	44.1	33.4	35.1	0.0	50.0	25.7	24.7	45.5	28.9	29.0
Incr Delay (d2), s/veh	0.4	3.7	7.3	18.2	0.6	0.0	4.2	0.5	1.2	4.7	9.2	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.1	5.6	8.0	3.7	0.0	1.7	3.8	2.8	4.8	15.8	20.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	46.9	51.4	51.6	35.8	0.0	54.2	26.2	25.9	50.2	38.1	48.7
LnGrp LOS	D	D	D	D	D		D	C	C	D	D	D
Approach Vol, veh/h		493			763			1096			2950	
Approach Delay, s/veh		46.3			48.2			29.4			42.2	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	44.6	20.0	24.0	11.0	53.0	12.0	32.0
Change Period (Y+Rc), s	5.0	6.0	5.0	7.0	5.0	6.0	5.0	7.0
Max Green Setting (Gmax), s	22.0	38.0	15.0	32.0	13.0	47.0	18.0	29.0
Max Q Clear Time (g_c+I1), s	13.5	12.7	17.0	15.7	6.0	43.6	7.2	10.4
Green Ext Time (p_c), s	1.0	4.3	0.0	1.3	0.2	2.9	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	142	202	67	36	15	69	81	60	70	680	8
Future Volume (vph)	5	142	202	67	36	15	69	81	60	70	680	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.983				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.995	
Satd. Flow (prot)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Flt Permitted		0.999			0.972		0.950				0.995	
Satd. Flow (perm)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.84	0.87	0.79	0.78	0.78	0.79	0.81	0.79	0.80	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	6	169	232	85	46	19	87	100	76	88	739	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	0	0	150	0	87	100	76	0	837	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	98.6

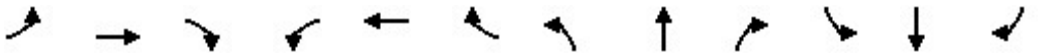
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	5	142	202	67	36	15	69	81	60	70	680	8
Future Vol, veh/h	5	142	202	67	36	15	69	81	60	70	680	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	84	87	79	78	78	79	81	79	80	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	6	169	232	85	46	19	87	100	76	88	739	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1227	1194	744	1395	1199	100	749	0	0	100	0	0
Stage 1	920	920	-	274	274	-	-	-	-	-	-	-
Stage 2	307	274	-	1121	925	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	154	185	411	118	184	950	851	-	-	1480	-	-
Stage 1	322	347	-	728	680	-	-	-	-	-	-	-
Stage 2	699	680	-	248	345	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	~ 149	411	-	148	950	851	-	-	1480	-	-
Mov Cap-2 Maneuver	98	~ 149	-	-	148	-	-	-	-	-	-	-
Stage 1	289	312	-	654	611	-	-	-	-	-	-	-
Stage 2	568	611	-	~ 44	310	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	$ 397.5		3.2	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	851	-	-	-	231	1480	-	-
HCM Lane V/C Ratio	0.103	-	-	-	1.765	0.059	-	-
HCM Control Delay (s)	9.7	-	-	-	$ 397.5	7.6	0	-
HCM Lane LOS	A	-	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	-	27.6	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	204	191	520	135	348	102	1790	195	433	1520	72
Future Volume (vph)	136	204	191	520	135	348	102	1790	195	433	1520	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	220		0	220		220	220		0
Storage Lanes	1		0	2		1	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	0.97	0.86	1.00	0.97	0.86	0.86
Frt		0.927				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3249	0	3400	1845	1568	3400	6346	1568	3400	6295	0
Flt Permitted	0.648			0.252			0.950			0.950		
Satd. Flow (perm)	1195	3249	0	902	1845	1568	3400	6346	1568	3400	6295	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		144				391			173		11	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		480			657			649			1000	
Travel Time (s)		9.4			12.8			9.8			15.2	
Peak Hour Factor	0.84	0.87	0.86	0.92	0.84	0.89	0.83	0.94	0.86	0.90	0.94	0.80
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	162	234	222	565	161	391	123	1904	227	481	1617	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	456	0	565	161	391	123	1904	227	481	1707	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		40	40	40	40	40	40	40	40	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	36.0		19.0	34.0	34.0	13.0	39.0	39.0	26.0	52.0	
Total Split (%)	17.5%	30.0%		15.8%	28.3%	28.3%	10.8%	32.5%	32.5%	21.7%	43.3%	
Maximum Green (s)	16.0	29.0		14.0	27.0	27.0	8.0	33.0	33.0	21.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0		5.0	7.0	7.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	30.5	16.1		33.7	17.7	17.7	7.7	34.8	34.8	19.0	46.1	
Actuated g/C Ratio	0.29	0.15		0.31	0.17	0.17	0.07	0.33	0.33	0.18	0.43	
v/c Ratio	0.40	0.75		0.92	0.53	0.67	0.50	0.92	0.36	0.80	0.63	
Control Delay	28.3	37.4		51.6	48.2	10.3	56.3	44.3	10.3	53.1	25.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.3	37.4		51.6	48.2	10.3	56.3	44.3	10.3	53.1	25.4	
LOS	C	D		D	D	B	E	D	B	D	C	
Approach Delay		35.0			36.7			41.5			31.5	
Approach LOS		C			D			D			C	

Intersection Summary

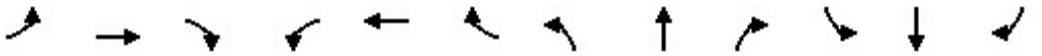
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 107
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Vasquez Blvd & 60th Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	162	456	565	161	391	123	1904	227	481	1707
v/c Ratio	0.40	0.75	0.92	0.53	0.67	0.50	0.92	0.36	0.80	0.63
Control Delay	28.3	37.4	51.6	48.2	10.3	56.3	44.3	10.3	53.1	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	37.4	51.6	48.2	10.3	56.3	44.3	10.3	53.1	25.4
Queue Length 50th (ft)	79	108	155	102	0	42	369	26	161	257
Queue Length 95th (ft)	120	155	#244	162	82	71	#517	84	235	335
Internal Link Dist (ft)		400		577			569			920
Turn Bay Length (ft)	100		220			220		220	220	
Base Capacity (vph)	464	987	611	466	688	254	2064	626	668	2718
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.46	0.92	0.35	0.57	0.48	0.92	0.36	0.72	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	204	191	520	135	348	102	1790	195	433	1520	72
Future Volume (veh/h)	136	204	191	520	135	348	102	1790	195	433	1520	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	162	234	222	565	161	0	123	1904	227	481	1617	90
Peak Hour Factor	0.84	0.87	0.86	0.92	0.84	0.89	0.83	0.94	0.86	0.90	0.94	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	392	297	265	642	381		183	2050	505	560	2688	150
Arrive On Green	0.09	0.17	0.17	0.13	0.21	0.00	0.05	0.32	0.32	0.16	0.43	0.43
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	3428	6383	1572	3428	6234	347
Grp Volume(v), veh/h	162	234	222	565	161	0	123	1904	227	481	1242	465
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1714	1596	1572	1714	1596	1793
Q Serve(g_s), s	7.9	13.6	14.6	14.0	8.1	0.0	3.8	30.8	12.2	14.6	21.2	21.3
Cycle Q Clear(g_c), s	7.9	13.6	14.6	14.0	8.1	0.0	3.8	30.8	12.2	14.6	21.2	21.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	392	297	265	642	381		183	2050	505	560	2065	773
V/C Ratio(X)	0.41	0.79	0.84	0.88	0.42		0.67	0.93	0.45	0.86	0.60	0.60
Avail Cap(c_a), veh/h	490	479	428	642	470		257	2050	505	675	2065	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	42.5	42.9	32.5	36.9	0.0	49.6	35.0	28.7	43.4	23.3	23.3
Incr Delay (d2), s/veh	0.7	4.6	7.8	13.3	0.7	0.0	4.3	9.0	2.9	9.4	1.3	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.2	6.1	7.1	3.7	0.0	1.7	12.5	4.9	6.7	7.7	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	47.1	50.7	45.8	37.6	0.0	53.9	44.0	31.6	52.8	24.6	26.7
LnGrp LOS	C	D	D	D	D		D	D	C	D	C	C
Approach Vol, veh/h		618			726			2254			2188	
Approach Delay, s/veh		44.6			44.0			43.3			31.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	40.3	19.0	25.0	10.7	52.0	15.1	28.9
Change Period (Y+Rc), s	5.0	6.0	5.0	7.0	5.0	6.0	5.0	7.0
Max Green Setting (Gmax), s	21.0	33.0	14.0	29.0	8.0	46.0	16.0	27.0
Max Q Clear Time (g_c+I1), s	16.6	32.8	16.0	16.6	5.8	23.3	9.9	10.1
Green Ext Time (p_c), s	0.9	0.2	0.0	1.4	0.1	8.1	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	67	89	78	75	33	161	339	205	25	131	33
Future Volume (vph)	13	67	89	78	75	33	161	339	205	25	131	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.976				0.850		0.975	
Flt Protected		0.996			0.979		0.950				0.993	
Satd. Flow (prot)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.979		0.950				0.993	
Satd. Flow (perm)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.79	0.81	0.80	0.80	0.78	0.85	0.89	0.87	0.78	0.84	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	17	85	110	98	94	42	189	381	236	32	156	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	234	0	189	381	236	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	61

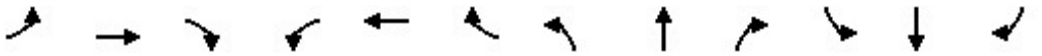
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	13	67	89	78	75	33	161	339	205	25	131	33
Future Vol, veh/h	13	67	89	78	75	33	161	339	205	25	131	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	79	81	80	80	78	85	89	87	78	84	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	17	85	110	98	94	42	189	381	236	32	156	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1068	1000	177	1098	1021	381	198	0	0	381	0	0
Stage 1	241	241	-	759	759	-	-	-	-	-	-	-
Stage 2	827	759	-	339	262	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	196	239	856	187	232	657	1351	-	-	1156	-	-
Stage 1	754	699	-	393	409	-	-	-	-	-	-	-
Stage 2	360	409	-	667	684	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	100	199	856	~ 96	193	657	1351	-	-	1156	-	-
Mov Cap-2 Maneuver	100	199	-	~ 96	193	-	-	-	-	-	-	-
Stage 1	648	677	-	338	352	-	-	-	-	-	-	-
Stage 2	213	352	-	493	663	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	43.6	$ 339.5	1.9	1.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1351	-	-	149	293	1156	-	-
HCM Lane V/C Ratio	0.14	-	-	1.568	0.721	0.028	-	-
HCM Control Delay (s)	8.1	-	-	$ 339.5	43.6	8.2	0	-
HCM Lane LOS	A	-	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	16	5.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	166	172	550	143	130	118	762	121	322	2375	86
Future Volume (vph)	84	166	172	550	143	130	118	762	121	322	2375	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	220		0	220		220	220		0
Storage Lanes	1		0	2		1	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	0.97	0.86	1.00	0.97	0.86	0.86
Frt		0.924				0.850			0.850		0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	3117	0	3273	1776	1509	3273	6108	1509	3273	6072	0
Flt Permitted	0.650			0.227			0.950			0.950		
Satd. Flow (perm)	1154	3117	0	782	1776	1509	3273	6108	1509	3273	6072	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		190				155			159		7	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		480			657			649			1000	
Travel Time (s)		9.4			12.8			9.8			15.2	
Peak Hour Factor	0.81	0.85	0.85	0.92	0.84	0.84	0.83	0.92	0.83	0.89	0.95	0.81
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	104	195	202	598	170	155	142	828	146	362	2500	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	397	0	598	170	155	142	828	146	362	2606	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		40	40	40	40	40	40	40	40	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	23.0	39.0		20.0	36.0	36.0	18.0	44.0	44.0	27.0	53.0	
Total Split (%)	17.7%	30.0%		15.4%	27.7%	27.7%	13.8%	33.8%	33.8%	20.8%	40.8%	
Maximum Green (s)	18.0	32.0		15.0	29.0	29.0	13.0	38.0	38.0	22.0	47.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0		5.0	7.0	7.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	26.0	13.6		34.4	18.2	18.2	10.0	40.3	40.3	16.9	47.2	
Actuated g/C Ratio	0.24	0.12		0.32	0.17	0.17	0.09	0.37	0.37	0.16	0.43	
v/c Ratio	0.32	0.72		1.01	0.57	0.41	0.47	0.37	0.22	0.71	0.99	
Control Delay	29.4	31.1		72.5	50.9	10.0	53.2	26.7	4.5	52.3	46.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.4	31.1		72.5	50.9	10.0	53.2	26.7	4.5	52.3	46.5	
LOS	C	C		E	D	A	D	C	A	D	D	
Approach Delay		30.8			58.1			27.2			47.2	
Approach LOS		C			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 108.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 43.5		Intersection LOS: D	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

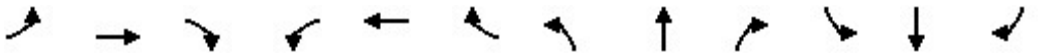
Splits and Phases: 1: Vasquez Blvd & 60th Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	397	598	170	155	142	828	146	362	2606
v/c Ratio	0.32	0.72	1.01	0.57	0.41	0.47	0.37	0.22	0.71	0.99
Control Delay	29.4	31.1	72.5	50.9	10.0	53.2	26.7	4.5	52.3	46.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	31.1	72.5	50.9	10.0	53.2	26.7	4.5	52.3	46.5
Queue Length 50th (ft)	52	72	~175	110	0	48	119	0	123	504
Queue Length 95th (ft)	85	114	#305	178	46	79	178	29	182	#735
Internal Link Dist (ft)		400		577			569			920
Turn Bay Length (ft)	100		220			220		220	220	
Base Capacity (vph)	444	1053	591	474	516	392	2258	657	663	2635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.38	1.01	0.36	0.30	0.36	0.37	0.22	0.55	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	166	172	550	143	130	118	762	121	322	2375	86
Future Volume (veh/h)	84	166	172	550	143	130	118	762	121	322	2375	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	104	195	202	598	170	0	142	828	146	362	2500	106
Peak Hour Factor	0.81	0.85	0.85	0.92	0.84	0.84	0.83	0.92	0.83	0.89	0.95	0.81
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	355	272	242	645	412		204	2220	547	442	2639	112
Arrive On Green	0.07	0.16	0.16	0.14	0.23	0.00	0.06	0.36	0.36	0.13	0.43	0.43
Sat Flow, veh/h	1711	1706	1522	3319	1796	1522	3319	6179	1522	3319	6125	259
Grp Volume(v), veh/h	104	195	202	598	170	0	142	828	146	362	1890	716
Grp Sat Flow(s),veh/h/ln	1711	1706	1522	1659	1796	1522	1659	1545	1522	1659	1545	1750
Q Serve(g_s), s	5.5	11.8	14.0	15.0	8.8	0.0	4.6	10.8	7.4	11.6	42.8	43.0
Cycle Q Clear(g_c), s	5.5	11.8	14.0	15.0	8.8	0.0	4.6	10.8	7.4	11.6	42.8	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	355	272	242	645	412		204	2220	547	442	1997	754
V/C Ratio(X)	0.29	0.72	0.83	0.93	0.41		0.70	0.37	0.27	0.82	0.95	0.95
Avail Cap(c_a), veh/h	522	501	447	645	478		396	2220	547	669	1997	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	43.5	44.5	33.9	35.8	0.0	50.2	25.8	24.8	46.0	29.8	29.9
Incr Delay (d2), s/veh	0.5	3.5	7.3	19.8	0.7	0.0	4.2	0.5	1.2	4.9	11.0	22.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.2	5.7	8.2	3.9	0.0	2.0	3.9	2.8	4.9	16.6	21.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	47.1	51.8	53.7	36.4	0.0	54.4	26.3	26.0	50.9	40.8	52.4
LnGrp LOS	D	D	D	D	D		D	C	C	D	D	D
Approach Vol, veh/h		501			768			1116			2968	
Approach Delay, s/veh		46.5			49.8			29.9			44.8	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	45.2	20.0	24.4	11.7	53.0	12.3	32.0
Change Period (Y+Rc), s	5.0	6.0	5.0	7.0	5.0	6.0	5.0	7.0
Max Green Setting (Gmax), s	22.0	38.0	15.0	32.0	13.0	47.0	18.0	29.0
Max Q Clear Time (g_c+I1), s	13.6	12.8	17.0	16.0	6.6	45.0	7.5	10.8
Green Ext Time (p_c), s	0.9	4.3	0.0	1.3	0.2	1.8	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	5	144	202	68	37	16	69	81	65	73	680	8
Future Volume (vph)	5	144	202	68	37	16	69	81	65	73	680	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.982				0.850		0.998	
Flt Protected		0.999			0.973		0.950				0.995	
Satd. Flow (prot)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Flt Permitted		0.999			0.973		0.950				0.995	
Satd. Flow (perm)	0	1685	0	0	1746	0	1736	1827	1553	0	1814	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.84	0.87	0.79	0.78	0.78	0.79	0.81	0.79	0.80	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	6	171	232	86	47	21	87	100	82	91	739	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	409	0	0	154	0	87	100	82	0	840	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	102

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	5	144	202	68	37	16	69	81	65	73	680	8
Future Vol, veh/h	5	144	202	68	37	16	69	81	65	73	680	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	84	87	79	78	78	79	81	79	80	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	6	171	232	86	47	21	87	100	82	91	739	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1234	1200	744	1402	1205	100	749	0	0	100	0	0
Stage 1	926	926	-	274	274	-	-	-	-	-	-	-
Stage 2	308	274	-	1128	931	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	152	183	411	116	182	950	851	-	-	1480	-	-
Stage 1	320	345	-	728	680	-	-	-	-	-	-	-
Stage 2	698	680	-	246	343	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	95	~ 147	411	-	146	950	851	-	-	1480	-	-
Mov Cap-2 Maneuver	95	~ 147	-	-	146	-	-	-	-	-	-	-
Stage 1	287	308	-	654	611	-	-	-	-	-	-	-
Stage 2	566	611	-	~ 42	307	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	$ 412.7		3.1	0.8
HCM LOS	F	-		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	851	-	-	-	228	1480	-	-
HCM Lane V/C Ratio	0.103	-	-	-	1.798	0.062	-	-
HCM Control Delay (s)	9.7	-	-	-	$ 412.7	7.6	0	-
HCM Lane LOS	A	-	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	-	28.2	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	273	9	32	118	2	7
Future Volume (vph)	273	9	32	118	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.899	
Flt Protected				0.989	0.988	
Satd. Flow (prot)	1853	0	0	1826	1607	0
Flt Permitted				0.989	0.988	
Satd. Flow (perm)	1853	0	0	1826	1607	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	1053			223	199	
Travel Time (s)	23.9			5.1	6.8	
Peak Hour Factor	0.88	0.78	0.78	0.83	0.78	0.78
Heavy Vehicles (%)	2%	2%	6%	2%	2%	6%
Adj. Flow (vph)	310	12	41	142	3	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	322	0	0	183	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	273	9	32	118	2	7
Future Vol, veh/h	273	9	32	118	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	78	78	83	78	78
Heavy Vehicles, %	2	2	6	2	2	6
Mvmt Flow	310	12	41	142	3	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	322	0	540	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	-	-	4.16	-	6.42	6.26
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.354
Pot Cap-1 Maneuver	-	-	1216	-	503	715
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1216	-	484	715
Mov Cap-2 Maneuver	-	-	-	-	484	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	783	-

Approach	SE	NW	NE
HCM Control Delay, s	0	1.8	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	646	1216	-	-	-
HCM Lane V/C Ratio	0.018	0.034	-	-	-
HCM Control Delay (s)	10.7	8.1	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	279	1	4	150	1	1
Future Volume (vph)	279	1	4	150	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	1863	0	0	1859	1662	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	1863	0	0	1859	1662	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	56			685	150	
Travel Time (s)	1.3			15.6	3.4	
Peak Hour Factor	0.88	0.78	0.78	0.85	0.78	0.78
Heavy Vehicles (%)	2%	2%	6%	2%	2%	6%
Adj. Flow (vph)	317	1	5	176	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	0	0	181	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	279	1	4	150	1	1
Future Vol, veh/h	279	1	4	150	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	78	78	85	78	78
Heavy Vehicles, %	2	2	6	2	2	6
Mvmt Flow	317	1	5	176	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	318	0	504	318
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	4.16	-	6.42	6.26
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.354
Pot Cap-1 Maneuver	-	-	1220	-	528	713
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1220	-	525	713
Mov Cap-2 Maneuver	-	-	-	-	525	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	605	-	-	1220	-
HCM Lane V/C Ratio	0.004	-	-	0.004	-
HCM Control Delay (s)	11	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	211	207	520	137	348	106	1790	195	433	1520	76
Future Volume (vph)	151	211	207	520	137	348	106	1790	195	433	1520	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	220		0	220		220	220		0
Storage Lanes	1		0	2		1	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	0.97	0.86	1.00	0.97	0.86	0.86
Frt		0.926				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3245	0	3400	1845	1568	3400	6346	1568	3400	6295	0
Flt Permitted	0.621			0.239			0.950			0.950		
Satd. Flow (perm)	1146	3245	0	855	1845	1568	3400	6346	1568	3400	6295	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		144				391			173		11	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		480			657			649			1000	
Travel Time (s)		9.4			12.8			9.8			15.2	
Peak Hour Factor	0.85	0.87	0.87	0.92	0.84	0.89	0.83	0.94	0.86	0.90	0.94	0.80
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	178	243	238	565	163	391	128	1904	227	481	1617	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	481	0	565	163	391	128	1904	227	481	1712	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		40	40	40	40	40	40	40	40	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8			2			
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	11.0	24.0	24.0	11.0	24.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	21.0	36.0		19.0	34.0	34.0	13.0	39.0	39.0	26.0	52.0	
Total Split (%)	17.5%	30.0%		15.8%	28.3%	28.3%	10.8%	32.5%	32.5%	21.7%	43.3%	
Maximum Green (s)	16.0	29.0		14.0	27.0	27.0	8.0	33.0	33.0	21.0	46.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0		5.0	7.0	7.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	31.8	16.9		34.0	18.0	18.0	7.8	34.7	34.7	19.1	46.1	
Actuated g/C Ratio	0.29	0.16		0.32	0.17	0.17	0.07	0.32	0.32	0.18	0.43	
v/c Ratio	0.43	0.76		0.94	0.53	0.67	0.52	0.93	0.36	0.80	0.63	
Control Delay	28.7	38.7		54.5	48.5	10.3	57.3	45.7	10.4	53.6	25.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.7	38.7		54.5	48.5	10.3	57.3	45.7	10.4	53.6	25.9	
LOS	C	D		D	D	B	E	D	B	D	C	
Approach Delay		36.0			38.2			42.8			32.0	
Approach LOS		D			D			D			C	

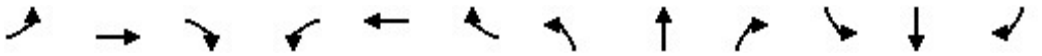
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 107.8			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 37.4		Intersection LOS: D	
Intersection Capacity Utilization 84.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	178	481	565	163	391	128	1904	227	481	1712
v/c Ratio	0.43	0.76	0.94	0.53	0.67	0.52	0.93	0.36	0.80	0.63
Control Delay	28.7	38.7	54.5	48.5	10.3	57.3	45.7	10.4	53.6	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	38.7	54.5	48.5	10.3	57.3	45.7	10.4	53.6	25.9
Queue Length 50th (ft)	88	119	155	105	0	44	375	27	162	262
Queue Length 95th (ft)	133	167	#252	164	82	73	#518	84	235	338
Internal Link Dist (ft)		400		577			569			920
Turn Bay Length (ft)	100		220			220		220	220	
Base Capacity (vph)	461	979	600	462	686	252	2044	622	663	2697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.49	0.94	0.35	0.57	0.51	0.93	0.36	0.73	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	211	207	520	137	348	106	1790	195	433	1520	76
Future Volume (veh/h)	151	211	207	520	137	348	106	1790	195	433	1520	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	178	243	238	565	163	0	128	1904	227	481	1617	95
Peak Hour Factor	0.85	0.87	0.87	0.92	0.84	0.89	0.83	0.94	0.86	0.90	0.94	0.80
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	403	314	280	632	383		187	2023	498	558	2641	155
Arrive On Green	0.10	0.18	0.18	0.13	0.21	0.00	0.05	0.32	0.32	0.16	0.43	0.43
Sat Flow, veh/h	1767	1763	1572	3428	1856	1572	3428	6383	1572	3428	6212	365
Grp Volume(v), veh/h	178	243	238	565	163	0	128	1904	227	481	1246	466
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1856	1572	1714	1596	1572	1714	1596	1790
Q Serve(g_s), s	8.7	14.2	15.9	14.0	8.3	0.0	4.0	31.4	12.5	14.8	21.9	21.9
Cycle Q Clear(g_c), s	8.7	14.2	15.9	14.0	8.3	0.0	4.0	31.4	12.5	14.8	21.9	21.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	403	314	280	632	383		187	2023	498	558	2035	761
V/C Ratio(X)	0.44	0.77	0.85	0.89	0.43		0.68	0.94	0.46	0.86	0.61	0.61
Avail Cap(c_a), veh/h	486	472	421	632	463		253	2023	498	665	2035	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	42.4	43.0	33.2	37.3	0.0	50.2	36.0	29.5	44.1	24.2	24.2
Incr Delay (d2), s/veh	0.8	4.5	10.0	15.1	0.7	0.0	4.5	10.2	3.0	9.8	1.4	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.5	6.8	7.3	3.8	0.0	1.8	12.9	5.0	6.8	8.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	46.8	53.0	48.3	38.1	0.0	54.7	46.2	32.5	53.9	25.5	27.8
LnGrp LOS	C	D	D	D	D		D	D	C	D	C	C
Approach Vol, veh/h		659			728			2259			2193	
Approach Delay, s/veh		45.1			46.0			45.3			32.3	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	40.3	19.0	26.3	10.9	52.0	15.9	29.4
Change Period (Y+Rc), s	5.0	6.0	5.0	7.0	5.0	6.0	5.0	7.0
Max Green Setting (Gmax), s	21.0	33.0	14.0	29.0	8.0	46.0	16.0	27.0
Max Q Clear Time (g_c+I1), s	16.8	33.4	16.0	17.9	6.0	23.9	10.7	10.3
Green Ext Time (p_c), s	0.8	0.0	0.0	1.4	0.1	8.0	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	40.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	68	89	83	78	36	161	339	206	26	131	33
Future Volume (vph)	13	68	89	83	78	36	161	339	206	26	131	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.975				0.850		0.975	
Flt Protected		0.996			0.980		0.950				0.993	
Satd. Flow (prot)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.980		0.950				0.993	
Satd. Flow (perm)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.79	0.81	0.81	0.80	0.78	0.85	0.89	0.87	0.78	0.84	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	17	86	110	102	98	46	189	381	237	33	156	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	246	0	189	381	237	0	231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	69.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	13	68	89	83	78	36	161	339	206	26	131	33
Future Vol, veh/h	13	68	89	83	78	36	161	339	206	26	131	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	79	81	81	80	78	85	89	87	78	84	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	17	86	110	102	98	46	189	381	237	33	156	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1074	1002	177	1100	1023	381	198	0	0	381	0	0
Stage 1	243	243	-	759	759	-	-	-	-	-	-	-
Stage 2	831	759	-	341	264	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	194	239	856	186	232	657	1351	-	-	1156	-	-
Stage 1	752	697	-	393	409	-	-	-	-	-	-	-
Stage 2	358	409	-	666	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	96	199	856	~ 95	193	657	1351	-	-	1156	-	-
Mov Cap-2 Maneuver	96	199	-	~ 95	193	-	-	-	-	-	-	-
Stage 1	647	675	-	338	352	-	-	-	-	-	-	-
Stage 2	207	352	-	490	661	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	45.5	$ 374.5	1.9	1.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1351	-	-	149	289	1156	-	-
HCM Lane V/C Ratio	0.14	-	-	1.652	0.736	0.029	-	-
HCM Control Delay (s)	8.1	-	-	$ 374.5	45.5	8.2	0	-
HCM Lane LOS	A	-	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	17.4	5.4	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	297	3	9	187	10	33
Future Volume (vph)	297	3	9	187	10	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.897	
Flt Protected				0.997	0.988	
Satd. Flow (prot)	1859	0	0	1853	1603	0
Flt Permitted				0.997	0.988	
Satd. Flow (perm)	1859	0	0	1853	1603	0
Link Speed (mph)	30			30	20	
Link Distance (ft)	1053			223	199	
Travel Time (s)	23.9			5.1	6.8	
Peak Hour Factor	0.88	0.78	0.78	0.86	0.78	0.78
Heavy Vehicles (%)	2%	2%	6%	2%	2%	6%
Adj. Flow (vph)	338	4	12	217	13	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	342	0	0	229	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	297	3	9	187	10	33
Future Vol, veh/h	297	3	9	187	10	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	78	78	86	78	78
Heavy Vehicles, %	2	2	6	2	2	6
Mvmt Flow	338	4	12	217	13	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	581	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	-	-	4.16	-	6.42	6.26
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.354
Pot Cap-1 Maneuver	-	-	1195	-	476	693
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1195	-	471	693
Mov Cap-2 Maneuver	-	-	-	-	471	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	790	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.4	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	625	1195	-	-	-
HCM Lane V/C Ratio	0.088	0.01	-	-	-
HCM Control Delay (s)	11.3	8	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	330	1	1	195	1	4
Future Volume (vph)	330	1	1	195	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.887	
Flt Protected					0.992	
Satd. Flow (prot)	1863	0	0	1862	1587	0
Flt Permitted					0.992	
Satd. Flow (perm)	1863	0	0	1862	1587	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	56			685	150	
Travel Time (s)	1.3			15.6	3.4	
Peak Hour Factor	0.89	0.78	0.78	0.86	0.78	0.78
Heavy Vehicles (%)	2%	2%	6%	2%	2%	6%
Adj. Flow (vph)	371	1	1	227	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	372	0	0	228	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	1	1	195	1	4
Future Vol, veh/h	330	1	1	195	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	78	78	86	78	78
Heavy Vehicles, %	2	2	6	2	2	6
Mvmt Flow	371	1	1	227	1	5

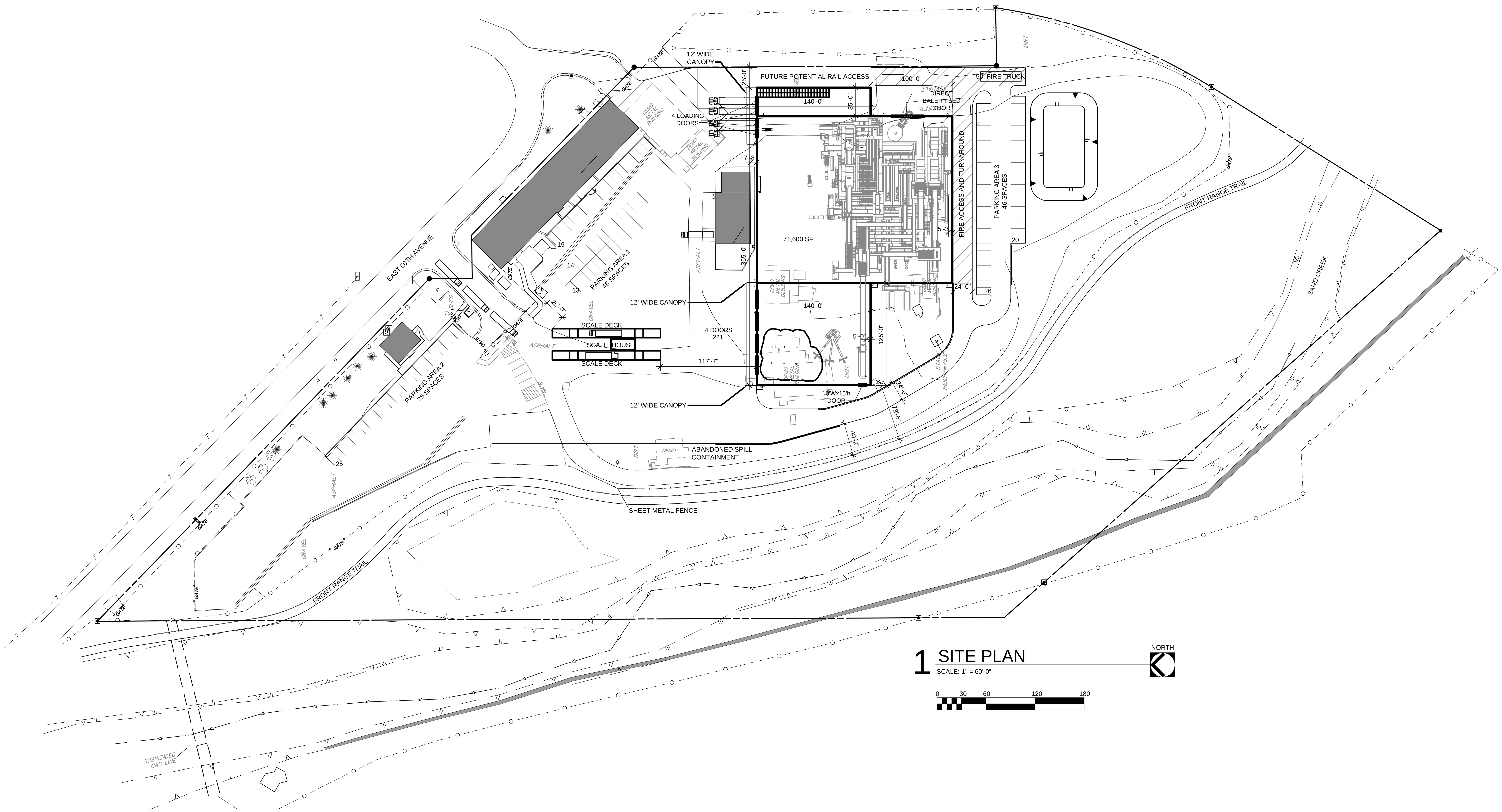
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	601	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.16	-	6.42	6.26
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.354
Pot Cap-1 Maneuver	-	-	1165	-	463	665
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1165	-	463	665
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	612	-	-	1165	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.9	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Appendix D

Site Plan – Waste Connections Recycling Facility



1 SITE PLAN

SCALE: 1" = 60'-0"

JT-11188

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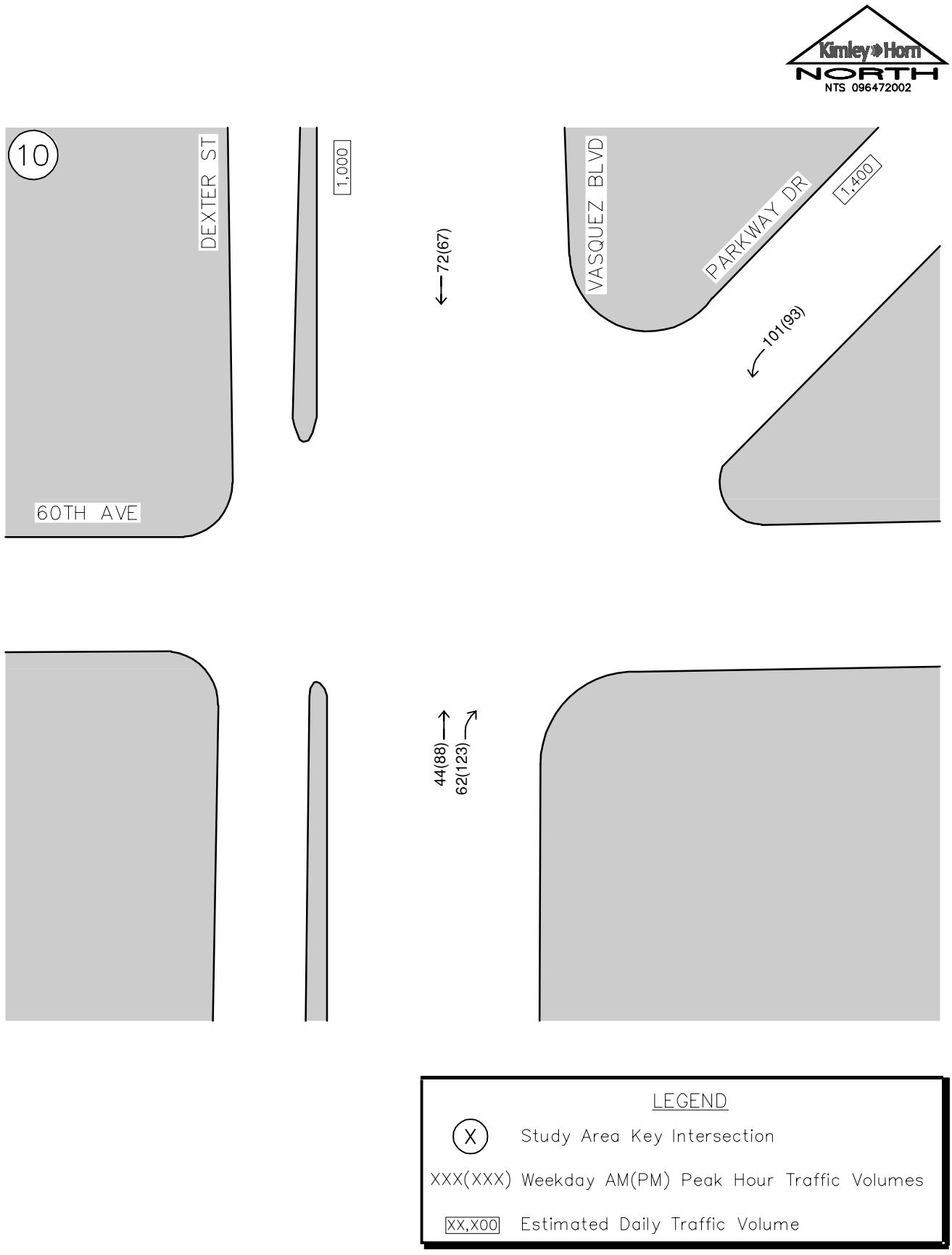
4150 EAST 60TH AVENUE
COMMERCE CITY, COLORADO 80022

DATE	DESC.
07/29/21	SITE STUDY
09/08/21	SITE STUDY
09/17/21	SITE STUDY
09/23/21	SITE STUDY
10/07/21	SITE STUDY

Appendix D

Mile High Greyhound Park Redevelopment
Figure 12: Project Traffic Assignment

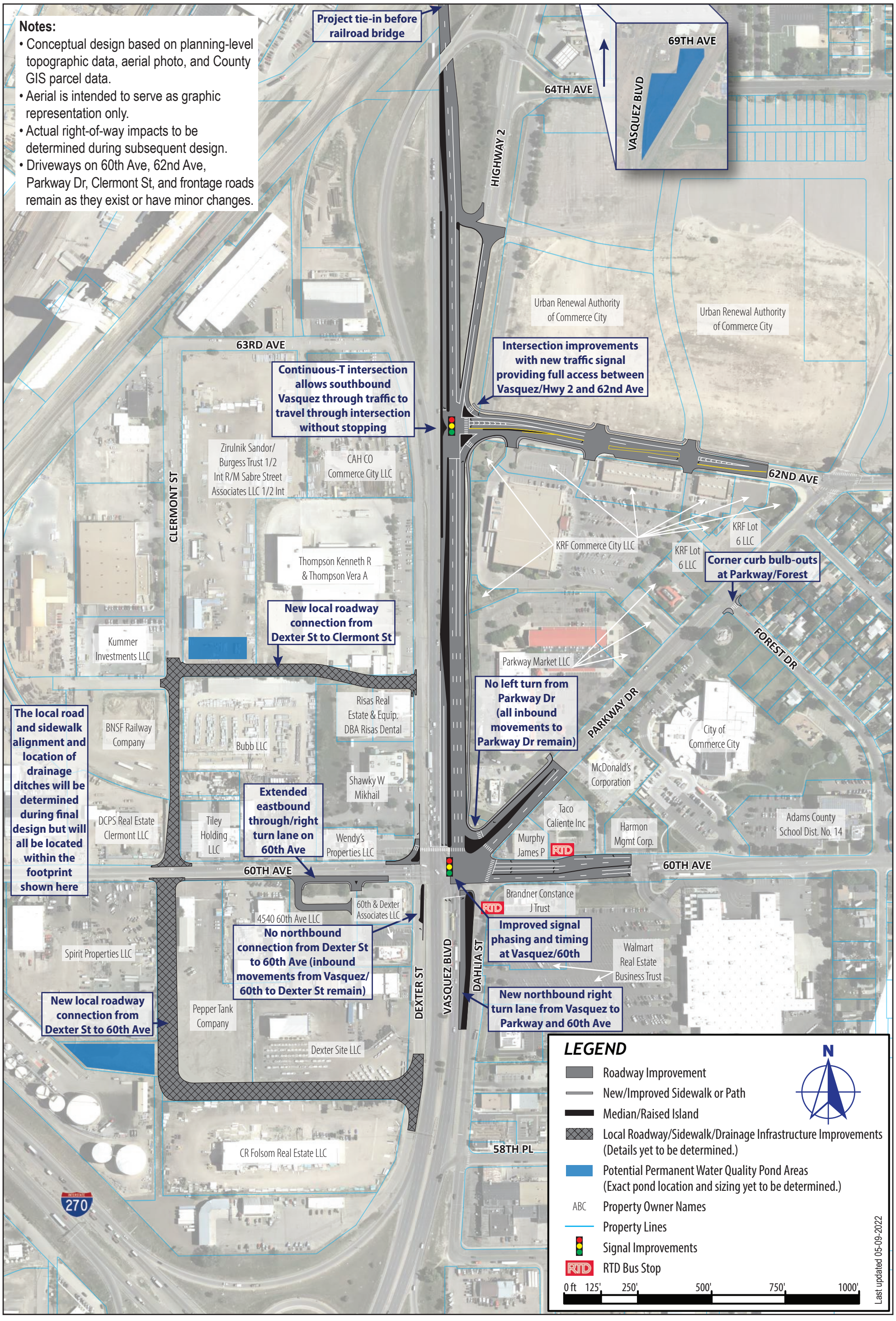


MILE HIGH GREYHOUND PARK REDEVELOPMENT FIGURE 12
PROJECT TRAFFIC ASSIGNMENT

Appendix F

CDOT – Vasquez Boulevard short term improvements

Proposed Project



Appendix G

PEL Study for Vasquez Boulevard
Figure 2-2: At Grade Package

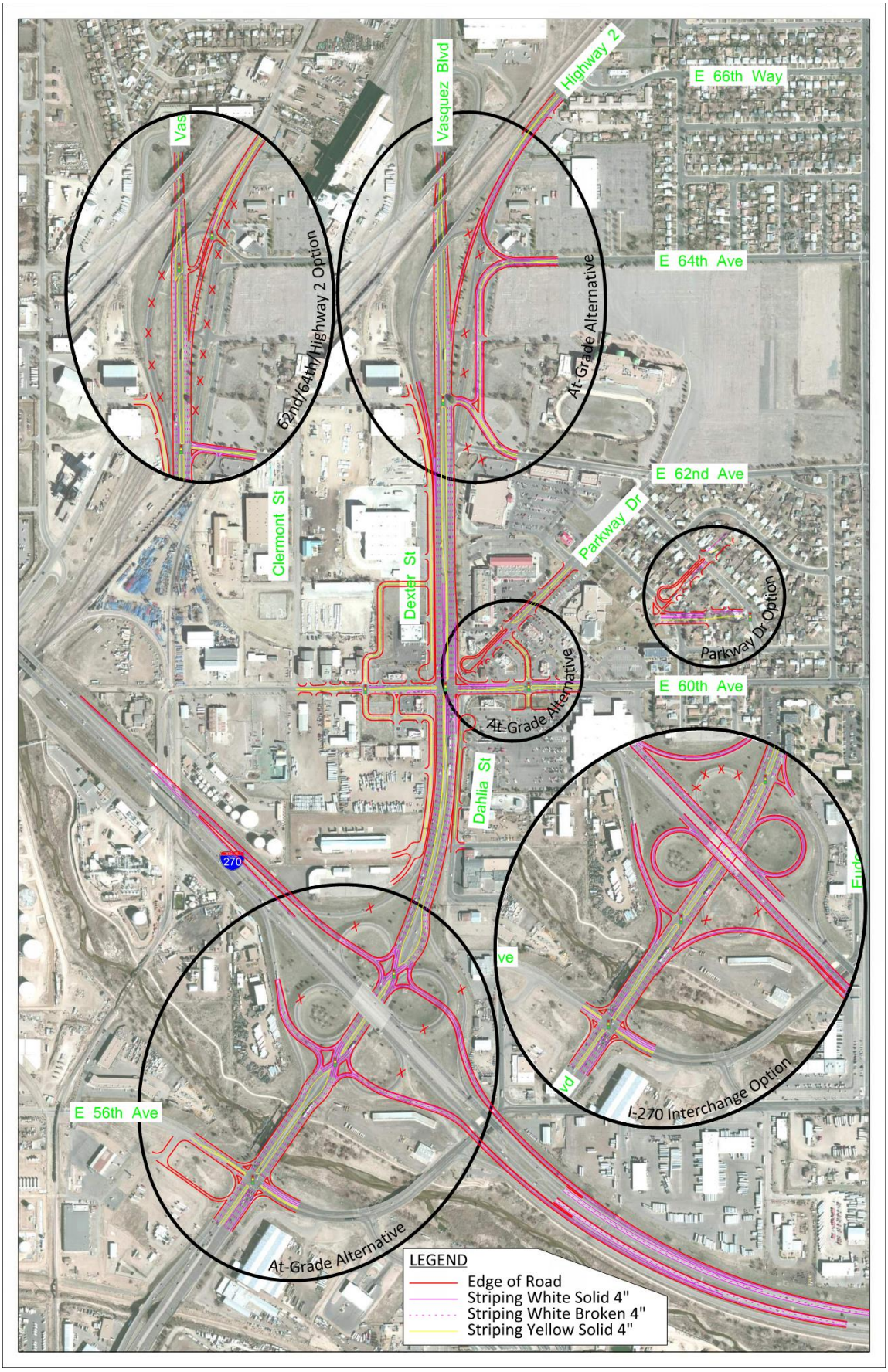


Figure 2-2. At Grade Package

Variance Letters Approved by the City Engineer

City of Commerce City Engineering
APPROVED
12/15/2022

October 21, 2022

J·R ENGINEERING

Mr. Shawn Poe, City Engineer
City of Commerce City
8602 Rosemary Street
Commerce City, CO 80022

Re: Traffic Variance Letter for *4150 E 60th Avenue Traffic Impact Study* (Waste Connections US) in Commerce City, CO dated October 17, 2022
Intersection: Brighton Boulevard & E 60th Avenue

The purpose of this letter is to request a design variance for the intersection of Brighton Boulevard & E 60th Avenue. This intersection does not comply with *Commerce City Construction Standards and Specifications*, which specifies a level of service (LOS) E or lower as unsatisfactory in a traffic impact study (TIS). We understand from the Public Works department that other relatively recent City-approved developments creating higher peak and daily traffic loads at this intersection than this project, and also confirming an unsatisfactory LOS, were not required to submit a Traffic Variance Letter. It is understood that submittal of a Traffic Variance Letter is a recent requirement.

According to the *HCM 6th Edition* Synchro reports, the intersection of Brighton & 60th (E2) is expected to operate satisfactorily in the Year 2024, except for the following:

- SEBLTR in the AM peak hour (LOS F)
- NWBLTR in the AM and PM peak hours (LOS F)

These failures occur in both the background traffic and opening day traffic scenarios; they are not caused by site generated traffic. These failures occur due to the relatively high volume on Brighton Boulevard as a 2-lane road. No roadway improvements have been recommended by the City nor CDOT.

Additionally, this industrial project adds 13 vehicles in the AM peak hour and 14 vehicles in the PM peak hour at Brighton & 60th, which are increases of 1.1% and 1.4% compared to the background traffic, respectively. JR views this increase as an insignificant impact to the overall performance of the intersection.

Therefore, JR recommends approving this variance at the intersection of Brighton Boulevard & E 60th Avenue.

7200 South Alton Way, Suite C400, Centennial, CO 80112
303-740-9393 • Fax: 303-721-9019 • www.jrengineering.com

If you have any questions or comments, please feel free to contact me at efarney@jrengineering.com or 303-267-6183.

Sincerely,
JR Engineering, LLC

Eli Farney, PE, PTOE
Director of Public Works

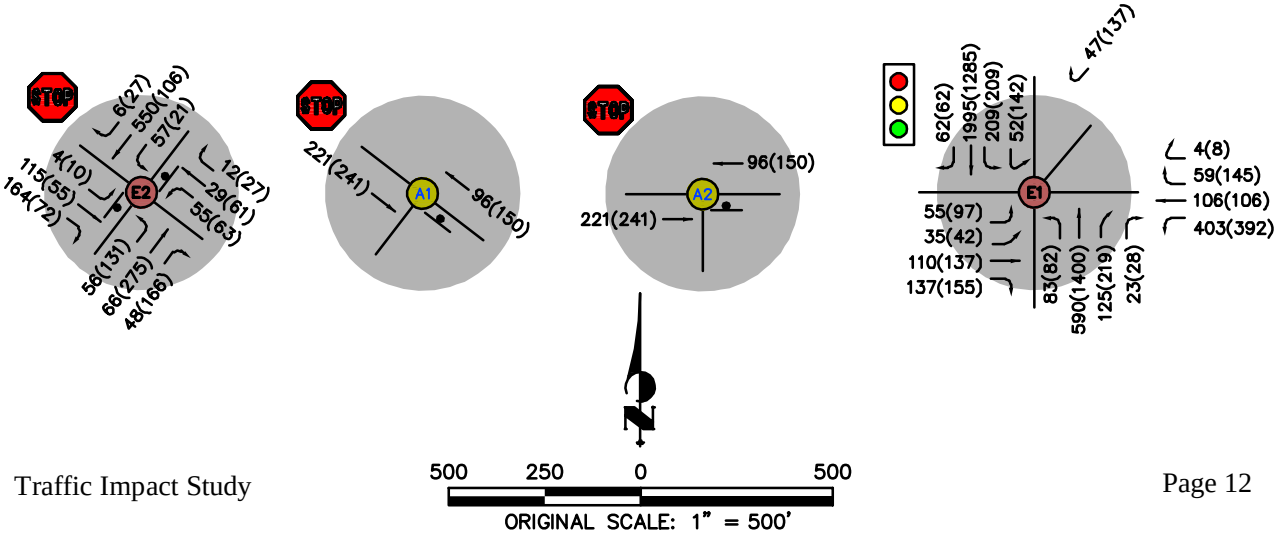
Attachments:

- TIS Figures 5-7 – Year 2024 Background, Site Generated, and Opening Day Traffic
- *HCM 6th Edition* Synchro Reports: Year 2024 at Brighton & 60th

LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

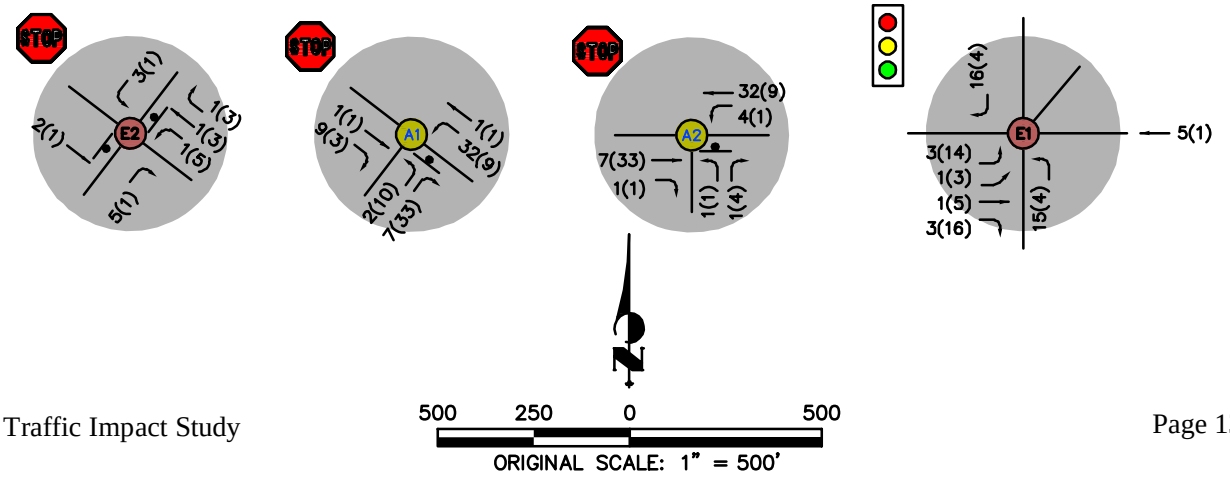
Figure 5 - Year 2024 Background Traffic



LEGEND

- EXISTING INTERSECTION
- ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- XX% DISTRIBUTION OF SITE GENERATED TRAFFIC

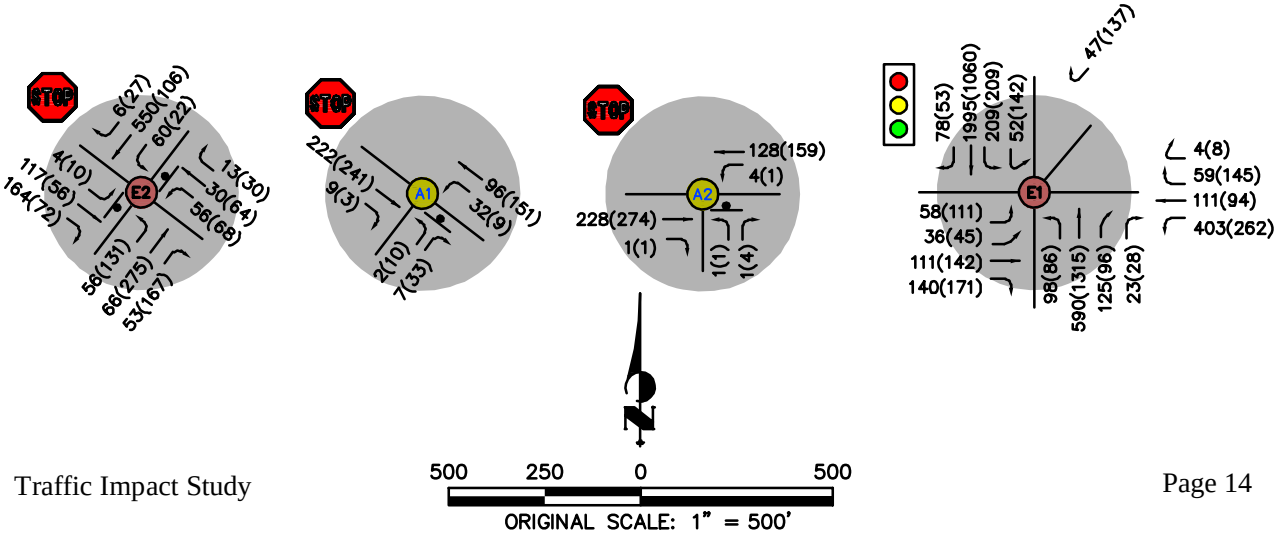
Figure 6 - Year 2024
Assignment of Site Generated Traffic



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

Figure 7 - Year 2024 Opening Day Traffic



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	115	164	55	29	12	58	66	48	57	550	6
Future Volume (vph)	4	115	164	55	29	12	58	66	48	57	550	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.984				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.995	
Satd. Flow (prot)	0	1685	0	0	1747	0	1736	1827	1553	0	1814	0
Flt Permitted		0.999			0.972		0.950				0.995	
Satd. Flow (perm)	0	1685	0	0	1747	0	1736	1827	1553	0	1814	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.83	0.85	0.78	0.78	0.78	0.78	0.79	0.78	0.78	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	5	139	193	71	37	15	74	84	62	73	598	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	0	123	0	74	84	62	0	679	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	71.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	4	115	164	55	29	12	58	66	48	57	550	6
Future Vol, veh/h	4	115	164	55	29	12	58	66	48	57	550	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	85	78	78	78	78	79	78	78	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	139	193	71	37	15	74	84	62	73	598	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1006	980	602	1146	984	84	606	0	0	84	0	0
Stage 1	748	748	-	232	232	-	-	-	-	-	-	-
Stage 2	258	232	-	914	752	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	218	248	496	175	246	970	962	-	-	1500	-	-
Stage 1	401	417	-	766	709	-	-	-	-	-	-	-
Stage 2	742	709	-	325	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	165	212	496	~ 46	211	970	962	-	-	1500	-	-
Mov Cap-2 Maneuver	165	212	-	~ 46	211	-	-	-	-	-	-	-
Stage 1	370	387	-	707	654	-	-	-	-	-	-	-
Stage 2	636	654	-	118	385	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	108.8	$ 479.2	3.1	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	962	-	-	71	314	1500	-	-
HCM Lane V/C Ratio	0.077	-	-	1.733	1.072	0.049	-	-
HCM Control Delay (s)	9.1	-	-	$ 479.2	108.8	7.5	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	10.8	12.7	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	55	72	63	61	27	131	275	166	21	106	27
Future Volume (vph)	10	55	72	63	61	27	131	275	166	21	106	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.930			0.975				0.850		0.975	
Flt Protected		0.996			0.980		0.950				0.993	
Satd. Flow (prot)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.980		0.950				0.993	
Satd. Flow (perm)	0	1660	0	0	1713	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.78	0.80	0.79	0.79	0.78	0.84	0.88	0.85	0.78	0.83	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	13	71	90	80	77	35	156	313	195	27	128	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	0	192	0	156	313	195	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	15.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	55	72	63	61	27	131	275	166	21	106	27
Future Vol, veh/h	10	55	72	63	61	27	131	275	166	21	106	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	80	79	79	78	84	88	85	78	83	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	13	71	90	80	77	35	156	313	195	27	128	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	881	825	146	905	842	313	163	0	0	313	0	0
Stage 1	200	200	-	625	625	-	-	-	-	-	-	-
Stage 2	681	625	-	280	217	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	263	303	891	253	296	718	1392	-	-	1225	-	-
Stage 1	793	728	-	466	471	-	-	-	-	-	-	-
Stage 2	434	471	-	718	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	263	891	163	257	718	1392	-	-	1225	-	-
Mov Cap-2 Maneuver	174	263	-	163	257	-	-	-	-	-	-	-
Stage 1	704	711	-	414	418	-	-	-	-	-	-	-
Stage 2	299	418	-	568	699	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	21.3	69.2	1.9	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1392	-	-	229	391	1225	-	-
HCM Lane V/C Ratio	0.112	-	-	0.837	0.443	0.022	-	-
HCM Control Delay (s)	7.9	-	-	69.2	21.3	8	0	-
HCM Lane LOS	A	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	6.5	2.2	0.1	-	-

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	4	117	164	56	30	13	56	66	53	60	550	6
Future Volume (vph)	4	117	164	56	30	13	56	66	53	60	550	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.923			0.982				0.850		0.998	
Flt Protected		0.999			0.972		0.950				0.994	
Satd. Flow (prot)	0	1685	0	0	1744	0	1736	1827	1553	0	1812	0
Flt Permitted		0.999			0.972		0.950				0.994	
Satd. Flow (perm)	0	1685	0	0	1744	0	1736	1827	1553	0	1812	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.83	0.85	0.78	0.78	0.78	0.78	0.79	0.78	0.79	0.92	0.78
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	5	141	193	72	38	17	72	84	68	76	598	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	0	127	0	72	84	68	0	682	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	78.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	4	117	164	56	30	13	56	66	53	60	550	6
Future Vol, veh/h	4	117	164	56	30	13	56	66	53	60	550	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	85	78	78	78	78	79	78	79	92	78
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	141	193	72	38	17	72	84	68	76	598	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1010	982	602	1149	986	84	606	0	0	84	0	0
Stage 1	754	754	-	228	228	-	-	-	-	-	-	-
Stage 2	256	228	-	921	758	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	217	247	496	174	246	970	962	-	-	1500	-	-
Stage 1	398	414	-	770	712	-	-	-	-	-	-	-
Stage 2	744	712	-	322	412	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	163	211	496	~ 44	210	970	962	-	-	1500	-	-
Mov Cap-2 Maneuver	163	211	-	~ 44	210	-	-	-	-	-	-	-
Stage 1	368	383	-	712	659	-	-	-	-	-	-	-
Stage 2	637	659	-	115	381	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	114.9	$ 526.9	2.9	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	962	-	-	69	311	1500	-	-
HCM Lane V/C Ratio	0.075	-	-	1.839	1.09	0.051	-	-
HCM Control Delay (s)	9	-	-	$ 526.9	114.9	7.5	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	11.4	13.2	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	56	72	68	64	30	131	275	167	22	106	27
Future Volume (vph)	10	56	72	68	64	30	131	275	167	22	106	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	125		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.931			0.975				0.850		0.975	
Flt Protected		0.996			0.979		0.950				0.993	
Satd. Flow (prot)	0	1662	0	0	1711	0	1703	1792	1524	0	1735	0
Flt Permitted		0.996			0.979		0.950				0.993	
Satd. Flow (perm)	0	1662	0	0	1711	0	1703	1792	1524	0	1735	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		105			128			1020			460	
Travel Time (s)		2.0			2.9			19.9			9.0	
Peak Hour Factor	0.78	0.78	0.80	0.79	0.79	0.78	0.84	0.88	0.85	0.78	0.83	0.78
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Adj. Flow (vph)	13	72	90	86	81	38	156	313	196	28	128	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	0	205	0	156	313	196	0	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	18

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↰	↑	↗		↕	
Traffic Vol, veh/h	10	56	72	68	64	30	131	275	167	22	106	27
Future Vol, veh/h	10	56	72	68	64	30	131	275	167	22	106	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	125	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	80	79	79	78	84	88	85	78	83	78
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	13	72	90	86	81	38	156	313	196	28	128	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	887	827	146	908	844	313	163	0	0	313	0	0
Stage 1	202	202	-	625	625	-	-	-	-	-	-	-
Stage 2	685	625	-	283	219	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.16	6.56	6.26	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.16	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.554	4.054	3.354	2.254	-	-	2.254	-	-
Pot Cap-1 Maneuver	260	302	891	252	296	718	1392	-	-	1225	-	-
Stage 1	791	727	-	466	471	-	-	-	-	-	-	-
Stage 2	432	471	-	715	714	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	168	262	891	161	256	718	1392	-	-	1225	-	-
Mov Cap-2 Maneuver	168	262	-	161	256	-	-	-	-	-	-	-
Stage 1	702	709	-	414	418	-	-	-	-	-	-	-
Stage 2	293	418	-	563	696	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	21.7	82.8	1.9	1.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1392	-	-	227	387	1225	-	-
HCM Lane V/C Ratio	0.112	-	-	0.906	0.451	0.023	-	-
HCM Control Delay (s)	7.9	-	-	82.8	21.7	8	0	-
HCM Lane LOS	A	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	7.5	2.3	0.1	-	-

City of Commerce City Engineering
APPROVED
12/15/2022

October 21, 2022

J·R ENGINEERING

Mr. Shawn Poe, City Engineer
City of Commerce City
8602 Rosemary Street
Commerce City, CO 80022

Re: Traffic Variance Letter for *4150 E 60th Avenue Traffic Impact Study* (Waste Connections US) in Commerce City, CO dated October 17, 2022
Intersection: Vasquez Boulevard & E 60th Avenue

The purpose of this letter is to request a design variance for the intersection of Vasquez Boulevard & E 60th Avenue. This intersection does not comply with *Commerce City Construction Standards and Specifications*, which specifies a level of service (LOS) E or lower as unsatisfactory in a traffic impact study (TIS). We understand from the Public Works department that other relatively recent City-approved developments creating higher peak and daily traffic loads at this intersection than this project, and also confirming an unsatisfactory LOS, were not required to submit a Traffic Variance Letter. It is understood that submittal of a Traffic Variance Letter is a recent requirement.

According to the *HCM 2000* Synchro reports for a 5-leg intersection, the intersection of Vasquez & 60th (E1) is expected to operate satisfactorily in the Year 2024, except for the following:

- EBL in the AM peak hour (LOS E)
- EBTR in the AM peak hour (LOS E)
- WBL in the AM and PM peak hours (LOS F and E, respectively)
- SBL1 in the AM and PM peak hours (LOS E, both)

These failures occur in both the background traffic and opening day traffic scenarios. These LOS are based on the assumption that CDOT intersection improvements will occur by Year 2024, including restricted movements from the 5th leg of Parkway Drive and the adjacent Dexter Street. If these improvements do not occur by Year 2024, then the LOS would have similar failures to the Year 2021 existing condition. Either way, the LOS failures are not caused by site generated traffic.

Additionally, as shown in Table 5 of the TIS, the increase of delay in the peak hours are less than 2%. As defined by Adams County Development Standards and Regulations section 8-02-06-06-02, "significance is defined as… when the short term or long term horizon year traffic without the project exceeds the established [LOS] threshold, and the project traffic causes a 2% increase in the volume/capacity ratio or delay."

Therefore, JR recommends approving this variance at the intersection of Vasquez Boulevard & E 60th Avenue.

7200 South Alton Way, Suite C400, Centennial, CO 80112
303-740-9393 • Fax: 303-721-9019 • www.jrengineering.com

If you have any questions or comments, please feel free to contact me at efarney@jrengineering.com or 303-267-6183.

Sincerely,
JR Engineering, LLC

Eli Farney, PE, PTOE
Director of Public Works

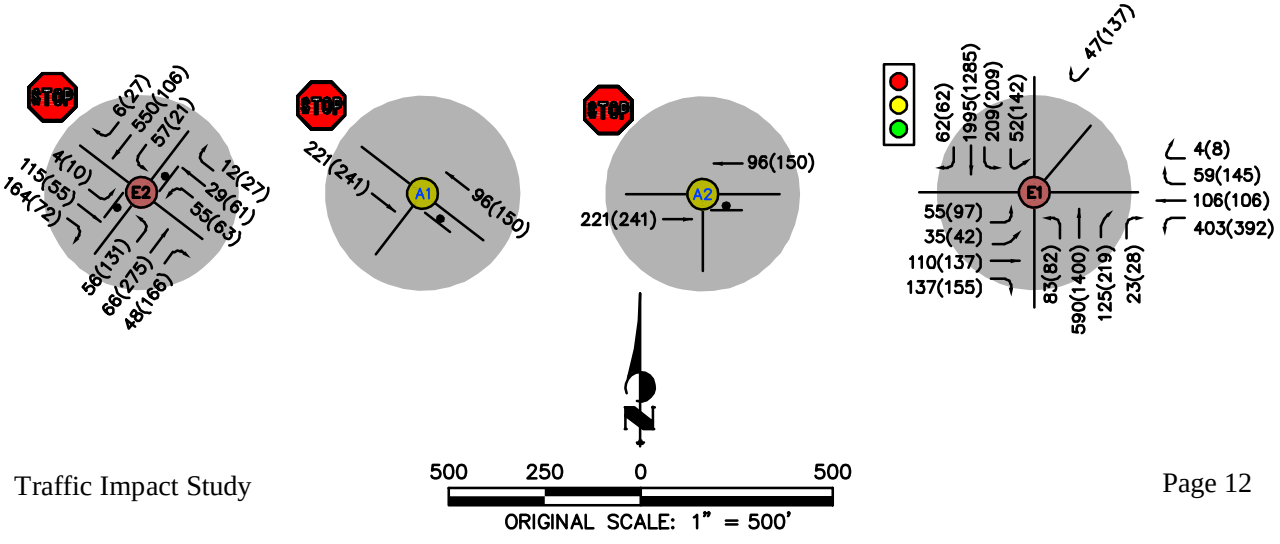
Attachments:

- TIS Figures 5-7 – Year 2024 Background, Site Generated, and Opening Day Traffic
- TIS Table 5 – LOS for Year 2024 Traffic
- *HCM 2000* Synchro Reports: Year 2024 at Vasquez & 60th

LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

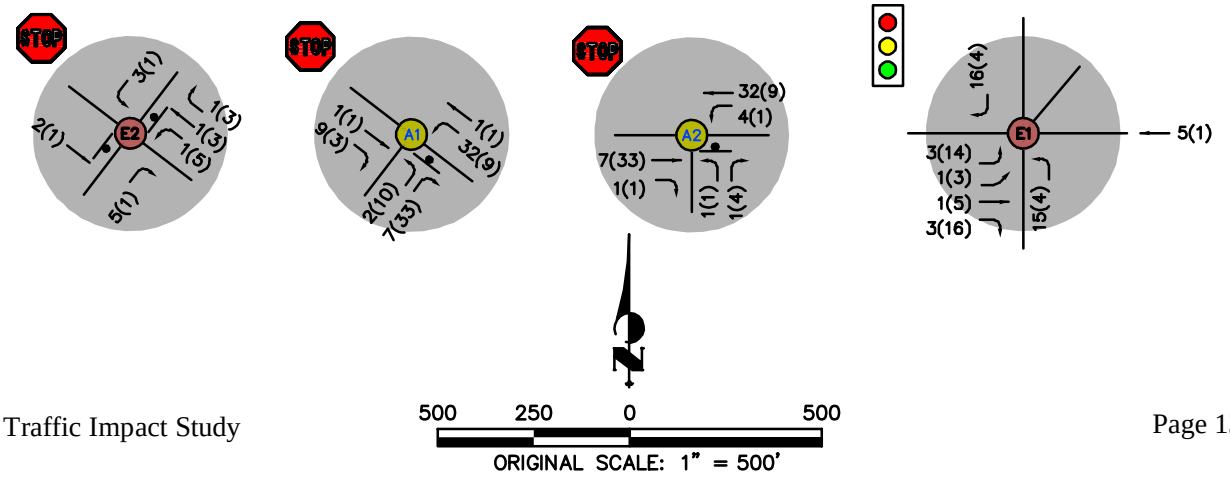
Figure 5 - Year 2024 Background Traffic



LEGEND

- EXISTING INTERSECTION
- ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- XX% DISTRIBUTION OF SITE GENERATED TRAFFIC

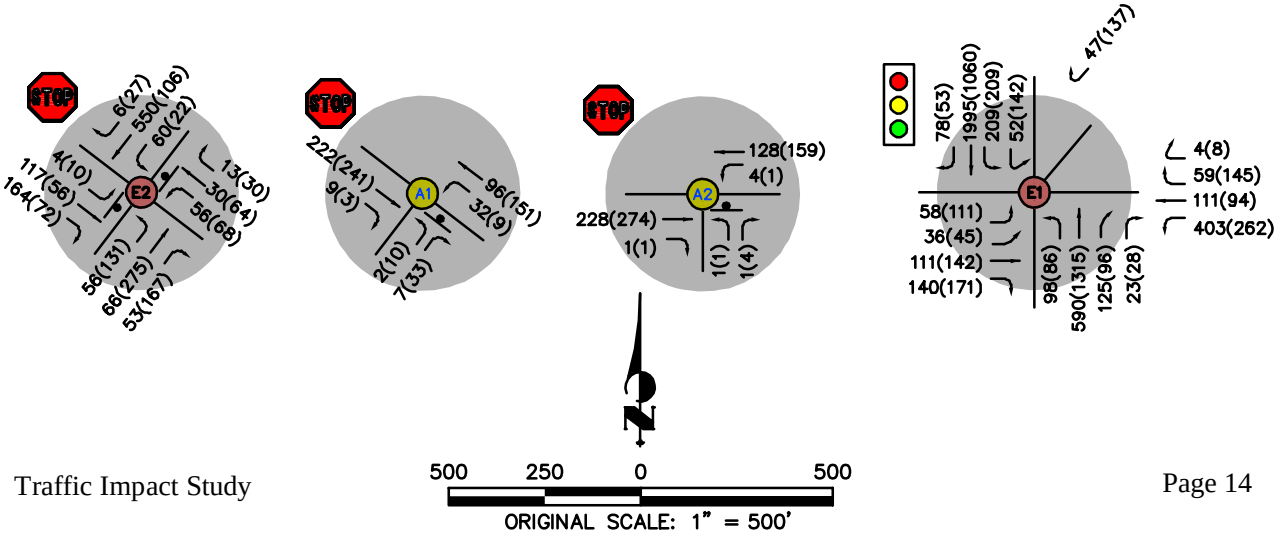
Figure 6 - Year 2024
Assignment of Site Generated Traffic



LEGEND

- X — EXISTING INTERSECTION
- X — ACCESS INTERSECTION
- EXISTING MOVEMENT
- PROJECT SITE
- XX (XX) — AM (PM) PEAK HOUR TRIP DISTRIBUTION

Figure 7 - Year 2024 Opening Day Traffic



Regarding the intersection of Brighton & 60th (E2), the vacant site at 4150 E 60th Avenue does not cause to these failures. Therefore, Waste Connections should not be responsible for potential intersection improvements.

Analysis of Year 2024

Traffic analysis of the Year 2024 was also performed using Synchro and the *HCM 6th Edition/HCM 2000*. As stated previously, short term improvements include restricted movements from Parkway Drive and Dexter Street. The volumes approaching from Parkway Drive were rerouted through Vasquez and 60th. The signal timing was adjusted as well. The projected traffic volumes were input and the LOS results are summarized in **Table 5**. The LOS reports are included in **Appendix C**.

Table 5 – LOS for Year 2024 Traffic

Signalized Intersection	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - Vasquez Boulevard & E 60th Avenue/Parkway Drive	EBL	E	D	E	D
	EBTR	E	D	E	D
	WBL	F	E	F	E
	WBT	D	D	D	D
	WBR	D	D	D	D
	NBL	D	C	D	C
	NBT	C	C	C	C
	NBR	C	C	C	C
	SBL1	E	E	E	E
	SBL2	D	D	D	D
	SBTR	D	C	D	C
	SWBTR	B	B	B	B
	Overall	**D**	**D**	**D**	**D**
	Delay (sec)	**43.9**	**36.6**	**44.7 (+1.8%)**	**37.1 (+1.4%)**
TWSC Intersection					
E2 - Brighton Boulevard & E 60th Avenue/ Colorado Boulevard	SEBLTR	F	C	F	C
	NWBLTR	F	F	F	F
	NEBL	A	A	A	A
	SWBLTR	A	A	A	A
A1 - 60th Avenue & Access 1	NWBLT	N/A	N/A	A	A
	NEBLR	N/A	N/A	B	B
A2 - 60th Avenue & Access 2	WBLT	N/A	N/A	A	A
	NBLR	N/A	N/A	B	B

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, SEB=Southeast-Bound, NWB=Northwest-Bound, NEB-Northeast-Bound, SWB=Southwest-Bound
2. N/A=Not Applicable
3. L=Left, R=Right, T=Through
4. Yellow highlight exceeds Established Threshold of LOS D

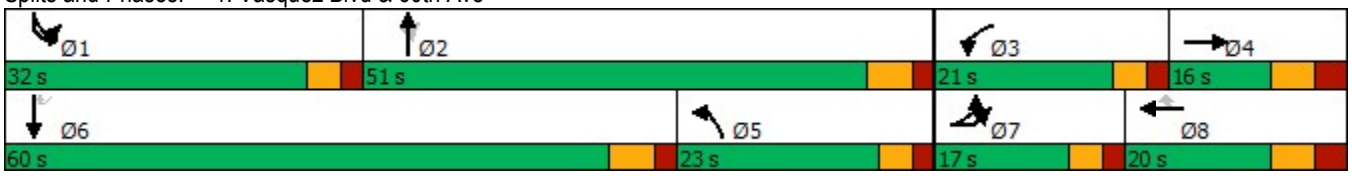
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Future Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.917				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			163				173				127	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.78	0.78	0.83	0.84	0.90	0.83	0.78	0.78	0.81	0.92	0.84	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	71	45	133	163	448	128	76	5	102	641	149	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	296	0	448	128	81	0	102	641	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	62	47
Future Volume (vph)	52	209	1995	62	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.995		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1687	1687	4823	0	1536
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1687	1687	4823	0	1536
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			6		293
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.78	0.87	0.95	0.79	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Adj. Flow (vph)	67	240	2100	78	60
Shared Lane Traffic (%)					
Lane Group Flow (vph)	67	240	2178	0	60
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	17.0	17.0	16.0		21.0	20.0	20.0		23.0	51.0	51.0	
Total Split (%)	14.2%	14.2%	13.3%		17.5%	16.7%	16.7%		19.2%	42.5%	42.5%	
Maximum Green (s)	12.0	12.0	9.0		16.0	13.0	13.0		18.0	45.0	45.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		11.1	8.8		16.0	13.7	13.7		12.1	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
v/c Ratio		0.71	0.76		0.98	0.60	0.24		0.29	0.33	0.26	
Control Delay		74.1	37.0		86.0	61.8	1.7		48.6	25.0	9.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		74.1	37.0		86.0	61.8	1.7		48.6	25.0	9.2	
LOS		E	D		F	E	A		D	C	A	
Approach Delay			47.5			70.9				24.6		
Approach LOS			D			E				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 114.1			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 42.7		Intersection LOS: D	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	32.0	32.0	60.0		60.0
Total Split (%)	26.7%	26.7%	50.0%		50.0%
Maximum Green (s)	27.0	27.0	54.0		54.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
v/c Ratio	0.22	0.78	0.95		0.07
Control Delay	40.8	62.3	40.0		0.1
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	40.8	62.3	40.0		0.1
LOS	D	E	D		A
Approach Delay			42.1		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	116	296	448	128	81	102	641	178	67	240	2178	60
v/c Ratio	0.71	0.76	0.98	0.60	0.24	0.29	0.33	0.26	0.22	0.78	0.95	0.07
Control Delay	74.1	37.0	86.0	61.8	1.7	48.6	25.0	9.2	40.8	62.3	40.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	37.0	86.0	61.8	1.7	48.6	25.0	9.2	40.8	62.3	40.0	0.1
Queue Length 50th (ft)	83	50	171	91	0	36	119	23	42	169	547	0
Queue Length 95th (ft)	130	87	#296	150	0	56	163	64	71	249	#739	0
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	177	394	459	213	333	517	1931	677	400	400	2289	882
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.75	0.98	0.60	0.24	0.20	0.33	0.26	0.17	0.60	0.95	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Future Volume (vph)	55	35	110	137	403	106	59	4	83	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1687	3095		3273	1776	1509		3273	4848	1509	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1687	3095		3273	1776	1509		3273	4848	1509	
Peak-hour factor, PHF	0.78	0.78	0.83	0.84	0.90	0.83	0.78	0.78	0.81	0.92	0.84	0.78
Adj. Flow (vph)	71	45	133	163	448	128	76	5	102	641	149	29
RTOR Reduction (vph)	0	0	150	0	0	0	71	0	0	0	76	0
Lane Group Flow (vph)	0	116	146	0	448	128	10	0	102	641	102	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		11.1	8.8		16.0	13.7	13.7		12.2	45.5	45.5	
Effective Green, g (s)		11.1	8.8		16.0	13.7	13.7		12.2	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		164	238		458	213	181		349	1933	601	
v/s Ratio Prot		0.07	0.05		c0.14	c0.07			0.03	c0.13		
v/s Ratio Perm							0.01				0.07	
v/c Ratio		0.71	0.61		0.98	0.60	0.05		0.29	0.33	0.17	
Uniform Delay, d1		49.9	51.0		48.9	47.6	44.5		47.0	23.8	22.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		13.0	4.6		36.0	4.7	0.1		0.5	0.5	0.6	
Delay (s)		63.0	55.6		84.8	52.3	44.6		47.4	24.2	22.7	
Level of Service		E	E		F	D	D		D	C	C	
Approach Delay (s)			57.7			73.5				26.5		
Approach LOS			E			E				C		

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	62	47
Future Volume (vph)	52	209	1995	62	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1687	1687	4822		1536
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1687	1687	4822		1536
Peak-hour factor, PHF	0.78	0.87	0.95	0.79	0.78
Adj. Flow (vph)	67	240	2100	78	60
RTOR Reduction (vph)	0	0	3	0	32
Lane Group Flow (vph)	67	240	2175	0	28
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	20.8	20.8	54.1		54.1
Effective Green, g (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	307	307	2286		728
v/s Ratio Prot	0.04	0.14	c0.45		
v/s Ratio Perm					0.02
v/c Ratio	0.22	0.78	0.95		0.04
Uniform Delay, d1	39.7	44.5	28.7		16.1
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	12.2	10.4		0.1
Delay (s)	40.1	56.7	39.2		16.2
Level of Service	D	E	D		B
Approach Delay (s)			40.9		
Approach LOS			D		

Intersection Summary

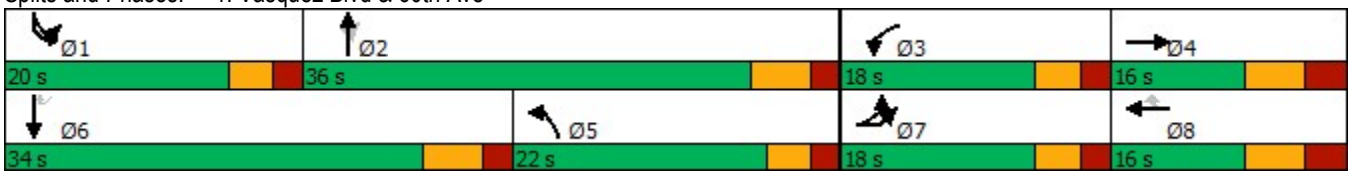
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Future Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.921				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1752	3228	0	3400	1845	1568	0	3400	5036	1568	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1752	3228	0	3400	1845	1568	0	3400	5036	1568	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			182				230				170	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.82	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	118	54	163	182	436	128	173	10	101	1505	252	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	345	0	436	128	183	0	101	1505	288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	62	137
Future Volume (vph)	142	209	1285	62	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.992		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1752	1752	4996	0	1596
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1752	1752	4996	0	1596
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			10		182
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.84	0.87	0.93	0.79	0.84
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Adj. Flow (vph)	169	240	1382	78	163
Shared Lane Traffic (%)					
Lane Group Flow (vph)	169	240	1460	0	163
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	18.0	18.0	16.0		18.0	16.0	16.0		22.0	36.0	36.0	
Total Split (%)	20.0%	20.0%	17.8%		20.0%	17.8%	17.8%		24.4%	40.0%	40.0%	
Maximum Green (s)	13.0	13.0	9.0		13.0	9.0	9.0		17.0	30.0	30.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		12.0	8.7		13.0	9.7	9.7		14.7	30.0	30.0	
Actuated g/C Ratio		0.13	0.10		0.15	0.11	0.11		0.16	0.34	0.34	
v/c Ratio		0.73	0.72		0.88	0.64	0.49		0.18	0.89	0.45	
Control Delay		56.0	27.8		58.1	54.9	7.1		31.7	36.0	12.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		56.0	27.8		58.1	54.9	7.1		31.7	36.0	12.1	
LOS		E	C		E	D	A		C	D	B	
Approach Delay			37.2			45.1				32.1		
Approach LOS			D			D				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.1			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 35.5		Intersection LOS: D	
Intersection Capacity Utilization 77.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	20.0	20.0	34.0		34.0
Total Split (%)	22.2%	22.2%	37.8%		37.8%
Maximum Green (s)	15.0	15.0	28.0		28.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.36		0.36
v/c Ratio	0.60	0.85	0.81		0.24
Control Delay	44.3	63.6	32.2		3.8
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	44.3	63.6	32.2		3.8
LOS	D	E	C		A
Approach Delay			37.3		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	172	345	436	128	183	101	1505	288	169	240	1460	163
v/c Ratio	0.73	0.72	0.88	0.64	0.49	0.18	0.89	0.45	0.60	0.85	0.81	0.24
Control Delay	56.0	27.8	58.1	54.9	7.1	31.7	36.0	12.1	44.3	63.6	32.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	27.8	58.1	54.9	7.1	31.7	36.0	12.1	44.3	63.6	32.2	3.8
Queue Length 50th (ft)	94	46	127	72	0	24	294	48	90	133	291	0
Queue Length 95th (ft)	137	81	#210	#134	22	42	#384	109	143	#243	#389	27
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	255	489	496	200	375	649	1695	641	295	295	1798	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.71	0.88	0.64	0.49	0.16	0.89	0.45	0.57	0.81	0.81	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Future Volume (vph)	97	42	137	155	392	106	145	8	82	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	3228		3400	1845	1568		3400	5036	1568	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1752	3228		3400	1845	1568		3400	5036	1568	
Peak-hour factor, PHF	0.82	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Adj. Flow (vph)	118	54	163	182	436	128	173	10	101	1505	252	36
RTOR Reduction (vph)	0	0	164	0	0	0	163	0	0	0	111	0
Lane Group Flow (vph)	0	172	181	0	436	128	20	0	101	1505	177	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		12.0	8.7		13.0	9.7	9.7		13.5	31.1	31.1	
Effective Green, g (s)		12.0	8.7		13.0	9.7	9.7		13.5	31.1	31.1	
Actuated g/C Ratio		0.13	0.10		0.14	0.11	0.11		0.15	0.34	0.34	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		233	311		490	198	168		508	1736	540	
v/s Ratio Prot		0.10	0.06		c0.13	c0.07			0.03	c0.30		
v/s Ratio Perm							0.01				0.11	
v/c Ratio		0.74	0.58		0.89	0.65	0.12		0.20	0.87	0.33	
Uniform Delay, d1		37.6	39.0		37.9	38.6	36.4		33.6	27.6	21.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.5	2.7		17.7	7.1	0.3		0.2	6.1	1.6	
Delay (s)		49.1	41.8		55.6	45.7	36.7		33.8	33.7	23.4	
Level of Service		D	D		E	D	D		C	C	C	
Approach Delay (s)			44.2			49.2				32.2		
Approach LOS			D			D				C		

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	62	137
Future Volume (vph)	142	209	1285	62	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1752	1752	4996		1596
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1752	1752	4996		1596
Peak-hour factor, PHF	0.84	0.87	0.93	0.79	0.84
Adj. Flow (vph)	169	240	1382	78	163
RTOR Reduction (vph)	0	0	6	0	105
Lane Group Flow (vph)	169	240	1454	0	58
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	14.4	14.4	32.0		32.0
Effective Green, g (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.35		0.35
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	279	279	1772		566
v/s Ratio Prot	0.10	0.14	c0.29		
v/s Ratio Perm					0.04
v/c Ratio	0.61	0.86	0.82		0.10
Uniform Delay, d1	35.3	36.9	26.5		19.5
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.7	22.7	4.4		0.4
Delay (s)	38.9	59.6	30.9		19.8
Level of Service	D	E	C		B
Approach Delay (s)			35.3		
Approach LOS			D		

Intersection Summary

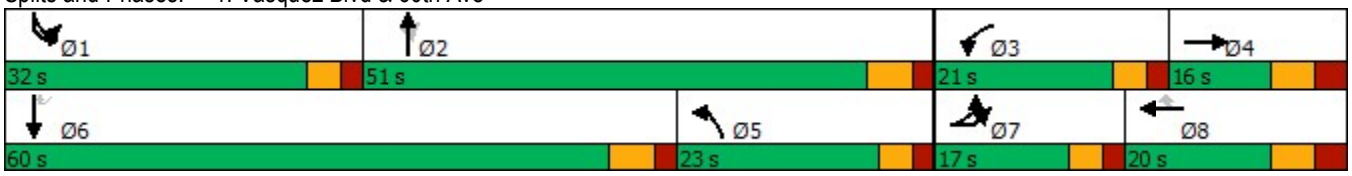
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Future Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.917				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1687	3094	0	3273	1776	1509	0	3273	4848	1509	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			167				173				127	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.78	0.78	0.83	0.84	0.90	0.83	0.79	0.78	0.82	0.92	0.84	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Adj. Flow (vph)	74	46	134	167	448	134	75	5	120	641	149	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	301	0	448	134	80	0	120	641	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	78	47
Future Volume (vph)	52	209	1995	78	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.993		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1687	1687	4814	0	1536
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1687	1687	4814	0	1536
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			8		289
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.78	0.87	0.95	0.80	0.78
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Adj. Flow (vph)	67	240	2100	98	60
Shared Lane Traffic (%)					
Lane Group Flow (vph)	67	240	2198	0	60
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	17.0	17.0	16.0		21.0	20.0	20.0		23.0	51.0	51.0	
Total Split (%)	14.2%	14.2%	13.3%		17.5%	16.7%	16.7%		19.2%	42.5%	42.5%	
Maximum Green (s)	12.0	12.0	9.0		16.0	13.0	13.0		18.0	45.0	45.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.6	45.6	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
v/c Ratio		0.73	0.77		0.98	0.64	0.24		0.34	0.33	0.26	
Control Delay		75.5	37.0		86.2	63.8	1.7		49.4	25.0	9.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		75.5	37.0		86.2	63.8	1.7		49.4	25.0	9.2	
LOS		E	D		F	E	A		D	C	A	
Approach Delay			48.0			71.5				25.1		
Approach LOS			D			E				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 114.2			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 43.7		Intersection LOS: D	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	32.0	32.0	60.0		60.0
Total Split (%)	26.7%	26.7%	50.0%		50.0%
Maximum Green (s)	27.0	27.0	54.0		54.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
v/c Ratio	0.22	0.78	0.96		0.07
Control Delay	40.8	62.4	41.6		0.1
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	40.8	62.4	41.6		0.1
LOS	D	E	D		A
Approach Delay			43.6		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	120	301	448	134	80	120	641	178	67	240	2198	60
v/c Ratio	0.73	0.77	0.98	0.64	0.24	0.34	0.33	0.26	0.22	0.78	0.96	0.07
Control Delay	75.5	37.0	86.2	63.8	1.7	49.4	25.0	9.2	40.8	62.4	41.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	37.0	86.2	63.8	1.7	49.4	25.0	9.2	40.8	62.4	41.6	0.1
Queue Length 50th (ft)	86	51	171	96	0	42	119	23	42	169	556	0
Queue Length 95th (ft)	#137	88	#296	#164	0	65	163	64	71	249	#752	0
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	177	398	459	211	331	516	1933	678	399	399	2284	879
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.76	0.98	0.64	0.24	0.23	0.33	0.26	0.17	0.60	0.96	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Future Volume (vph)	58	36	111	140	403	111	59	4	98	590	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1687	3093		3273	1776	1509		3273	4848	1509	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1687	3093		3273	1776	1509		3273	4848	1509	
Peak-hour factor, PHF	0.78	0.78	0.83	0.84	0.90	0.83	0.79	0.78	0.82	0.92	0.84	0.78
Adj. Flow (vph)	74	46	134	167	448	134	75	5	120	641	149	29
RTOR Reduction (vph)	0	0	154	0	0	0	70	0	0	0	76	0
Lane Group Flow (vph)	0	120	147	0	448	134	10	0	120	641	102	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.5	45.5	
Effective Green, g (s)		11.2	8.8		16.0	13.6	13.6		12.2	45.5	45.5	
Actuated g/C Ratio		0.10	0.08		0.14	0.12	0.12		0.11	0.40	0.40	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		165	238		458	211	179		349	1933	601	
v/s Ratio Prot		0.07	0.05		c0.14	c0.08			0.04	c0.13		
v/s Ratio Perm							0.01				0.07	
v/c Ratio		0.73	0.62		0.98	0.64	0.05		0.34	0.33	0.17	
Uniform Delay, d1		50.0	51.0		48.9	47.9	44.5		47.2	23.8	22.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		14.8	4.7		36.0	6.1	0.1		0.6	0.5	0.6	
Delay (s)		64.7	55.7		84.8	54.0	44.7		47.8	24.2	22.7	
Level of Service		E	E		F	D	D		D	C	C	
Approach Delay (s)			58.3			73.7				27.0		
Approach LOS			E			E				C		

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	52	209	1995	78	47
Future Volume (vph)	52	209	1995	78	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1687	1687	4815		1536
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1687	1687	4815		1536
Peak-hour factor, PHF	0.78	0.87	0.95	0.80	0.78
Adj. Flow (vph)	67	240	2100	98	60
RTOR Reduction (vph)	0	0	4	0	32
Lane Group Flow (vph)	67	240	2194	0	28
Heavy Vehicles (%)	7%	7%	7%	7%	7%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	20.8	20.8	54.1		54.1
Effective Green, g (s)	20.8	20.8	54.1		54.1
Actuated g/C Ratio	0.18	0.18	0.47		0.47
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	307	307	2283		728
v/s Ratio Prot	0.04	0.14	c0.46		
v/s Ratio Perm					0.02
v/c Ratio	0.22	0.78	0.96		0.04
Uniform Delay, d1	39.7	44.5	29.0		16.1
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.4	12.2	11.7		0.1
Delay (s)	40.1	56.7	40.6		16.2
Level of Service	D	E	D		B
Approach Delay (s)			42.2		
Approach LOS			D		

Intersection Summary

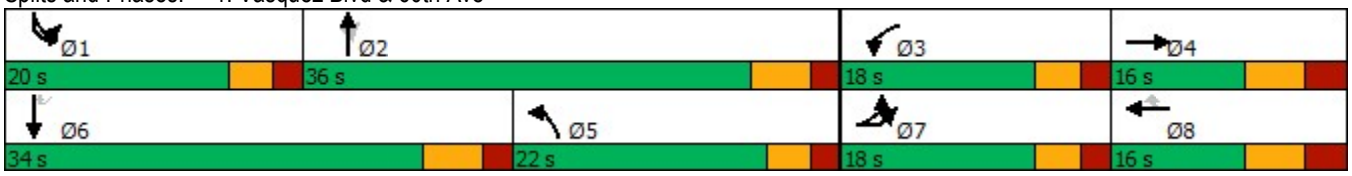
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Future Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		100	220		0		220		220	
Storage Lanes		1		0	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.97	0.91	1.00	0.91
Frt			0.919				0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	1752	3221	0	3400	1845	1568	0	3400	5036	1568	0
Flt Permitted		0.950			0.950				0.950			
Satd. Flow (perm)	0	1752	3221	0	3400	1845	1568	0	3400	5036	1568	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)			201				230				170	
Link Speed (mph)			35			35				45		
Link Distance (ft)			480			1479				649		
Travel Time (s)			9.4			28.8				9.8		
Peak Hour Factor	0.83	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	134	58	169	201	436	129	173	10	106	1505	252	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	370	0	436	129	183	0	106	1505	288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Right
Median Width(ft)			24			24				24		
Link Offset(ft)			0			0				0		
Crosswalk Width(ft)			16			16				16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	15		9	9	15		9	9
Number of Detectors	1	1	1		1	1	1		1	1	1	
Detector Template	Left	Left	Thru		Left	Thru	Right		Left	Thru	Right	
Leading Detector (ft)	20	40	40		40	40	40		40	40	40	
Trailing Detector (ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Position(ft)	0	0	0		0	0	0		0	0	0	
Detector 1 Size(ft)	20	40	40		40	40	40		40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Detector Phase	7	7	4		3	8	8		5	2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	8.0		5.0	8.0	8.0		5.0	15.0	15.0	
Minimum Split (s)	10.0	10.0	16.0		10.0	16.0	16.0		23.0	34.0	34.0	

Lane Group	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	66	137
Future Volume (vph)	142	209	1285	66	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Storage Length (ft)		220		0	
Storage Lanes		2		0	
Taper Length (ft)		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00
Frt			0.991		0.865
Flt Protected	0.950	0.950			
Satd. Flow (prot)	1752	1752	4991	0	1596
Flt Permitted	0.950	0.950			
Satd. Flow (perm)	1752	1752	4991	0	1596
Right Turn on Red				Yes	Yes
Satd. Flow (RTOR)			11		182
Link Speed (mph)			45		
Link Distance (ft)			1000		
Travel Time (s)			15.2		
Peak Hour Factor	0.84	0.87	0.93	0.79	0.84
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Adj. Flow (vph)	169	240	1382	84	163
Shared Lane Traffic (%)					
Lane Group Flow (vph)	169	240	1466	0	163
Enter Blocked Intersection	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right
Median Width(ft)			24		
Link Offset(ft)			0		
Crosswalk Width(ft)			16		
Two way Left Turn Lane					
Headway Factor	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15		9	9
Number of Detectors	1	1	1		1
Detector Template	Left	Left	Thru		Right
Leading Detector (ft)	40	40	40		20
Trailing Detector (ft)	0	0	0		0
Detector 1 Position(ft)	0	0	0		0
Detector 1 Size(ft)	40	40	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel					
Detector 1 Extend (s)	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Detector Phase	1	1	6		6
Switch Phase					
Minimum Initial (s)	5.0	5.0	15.0		15.0
Minimum Split (s)	12.0	12.0	21.0		21.0

Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Total Split (s)	18.0	18.0	16.0		18.0	16.0	16.0		22.0	36.0	36.0	
Total Split (%)	20.0%	20.0%	17.8%		20.0%	17.8%	17.8%		24.4%	40.0%	40.0%	
Maximum Green (s)	13.0	13.0	9.0		13.0	9.0	9.0		17.0	30.0	30.0	
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0		3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	3.0		2.0	3.0	3.0		2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag		Lag	Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Recall Mode	None	None	None		None	None	None		None	Max	Max	
Act Effct Green (s)		12.4	8.8		13.0	9.4	9.4		14.7	30.0	30.0	
Actuated g/C Ratio		0.14	0.10		0.15	0.11	0.11		0.16	0.34	0.34	
v/c Ratio		0.79	0.74		0.88	0.66	0.49		0.19	0.89	0.45	
Control Delay		61.2	27.8		58.3	56.9	7.3		31.9	36.2	12.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		61.2	27.8		58.3	56.9	7.3		31.9	36.2	12.1	
LOS		E	C		E	E	A		C	D	B	
Approach Delay			39.2			45.6				32.3		
Approach LOS			D			D				C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 35.9		Intersection LOS: D	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Vasquez Blvd & 60th Ave



Lane Group	SBL2	SBL	SBT	SBR	SWR2
Total Split (s)	20.0	20.0	34.0		34.0
Total Split (%)	22.2%	22.2%	37.8%		37.8%
Maximum Green (s)	15.0	15.0	28.0		28.0
Yellow Time (s)	3.0	3.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	6.0		6.0
Lead/Lag	Lead	Lead	Lead		Lead
Lead-Lag Optimize?					
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Recall Mode	None	None	Max		Max
Act Effct Green (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.36		0.36
v/c Ratio	0.60	0.85	0.82		0.24
Control Delay	44.4	63.8	32.4		3.8
Queue Delay	0.0	0.0	0.0		0.0
Total Delay	44.4	63.8	32.4		3.8
LOS	D	E	C		A
Approach Delay			37.5		
Approach LOS			D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL2	SBL	SBT	SWR2
Lane Group Flow (vph)	192	370	436	129	183	106	1505	288	169	240	1466	163
v/c Ratio	0.79	0.74	0.88	0.66	0.49	0.19	0.89	0.45	0.60	0.85	0.82	0.24
Control Delay	61.2	27.8	58.3	56.9	7.3	31.9	36.2	12.1	44.4	63.8	32.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	27.8	58.3	56.9	7.3	31.9	36.2	12.1	44.4	63.8	32.4	3.8
Queue Length 50th (ft)	106	48	127	72	0	26	294	48	90	133	293	0
Queue Length 95th (ft)	#162	84	#210	#135	22	43	#384	109	143	#243	#392	27
Internal Link Dist (ft)		400		1399			569				920	
Turn Bay Length (ft)			220			220		220	220	220		150
Base Capacity (vph)	255	506	495	195	371	648	1693	640	295	295	1795	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.73	0.88	0.66	0.49	0.16	0.89	0.45	0.57	0.81	0.82	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Future Volume (vph)	111	45	142	171	392	107	145	8	86	1400	219	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Lane Util. Factor		1.00	0.95		0.97	1.00	1.00		0.97	0.91	1.00	
Frt		1.00	0.92		1.00	1.00	0.85		1.00	1.00	0.85	
Flt Protected		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		1752	3219		3400	1845	1568		3400	5036	1568	
Flt Permitted		0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		1752	3219		3400	1845	1568		3400	5036	1568	
Peak-hour factor, PHF	0.83	0.78	0.84	0.85	0.90	0.83	0.84	0.78	0.81	0.93	0.87	0.78
Adj. Flow (vph)	134	58	169	201	436	129	173	10	106	1505	252	36
RTOR Reduction (vph)	0	0	181	0	0	0	164	0	0	0	111	0
Lane Group Flow (vph)	0	192	189	0	436	129	19	0	106	1505	177	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Prot	NA	Perm		Prot	NA	Perm	
Protected Phases	7	7	4		3	8			5	2		
Permitted Phases							8				2	
Actuated Green, G (s)		12.4	8.8		13.0	9.4	9.4		13.5	31.1	31.1	
Effective Green, g (s)		12.4	8.8		13.0	9.4	9.4		13.5	31.1	31.1	
Actuated g/C Ratio		0.14	0.10		0.14	0.10	0.10		0.15	0.34	0.34	
Clearance Time (s)		5.0	7.0		5.0	7.0	7.0		5.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		240	313		489	192	163		508	1734	540	
v/s Ratio Prot		0.11	0.06		c0.13	c0.07			0.03	c0.30		
v/s Ratio Perm							0.01				0.11	
v/c Ratio		0.80	0.60		0.89	0.67	0.12		0.21	0.87	0.33	
Uniform Delay, d1		37.7	39.1		38.0	39.0	36.7		33.7	27.7	21.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2		17.1	3.3		18.2	8.9	0.3		0.2	6.2	1.6	
Delay (s)		54.9	42.3		56.1	47.9	37.0		33.9	33.9	23.5	
Level of Service		D	D		E	D	D		C	C	C	
Approach Delay (s)			46.6			50.0				32.3		
Approach LOS			D			D				C		

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.3	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWR2
Lane Configurations					
Traffic Volume (vph)	142	209	1285	66	137
Future Volume (vph)	142	209	1285	66	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	6.0		6.0
Lane Util. Factor	1.00	1.00	0.91		1.00
Frt	1.00	1.00	0.99		0.86
Flt Protected	0.95	0.95	1.00		1.00
Satd. Flow (prot)	1752	1752	4993		1596
Flt Permitted	0.95	0.95	1.00		1.00
Satd. Flow (perm)	1752	1752	4993		1596
Peak-hour factor, PHF	0.84	0.87	0.93	0.79	0.84
Adj. Flow (vph)	169	240	1382	84	163
RTOR Reduction (vph)	0	0	7	0	105
Lane Group Flow (vph)	169	240	1459	0	58
Heavy Vehicles (%)	3%	3%	3%	3%	3%
Turn Type	Prot	Prot	NA		Perm
Protected Phases	1	1	6		
Permitted Phases					6
Actuated Green, G (s)	14.4	14.4	32.0		32.0
Effective Green, g (s)	14.4	14.4	32.0		32.0
Actuated g/C Ratio	0.16	0.16	0.35		0.35
Clearance Time (s)	5.0	5.0	6.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	279	279	1769		565
v/s Ratio Prot	0.10	0.14	c0.29		
v/s Ratio Perm					0.04
v/c Ratio	0.61	0.86	0.82		0.10
Uniform Delay, d1	35.3	37.0	26.6		19.5
Progression Factor	1.00	1.00	1.00		1.00
Incremental Delay, d2	3.7	22.7	4.5		0.4
Delay (s)	39.0	59.6	31.1		19.9
Level of Service	D	E	C		B
Approach Delay (s)			35.5		
Approach LOS			D		

Intersection Summary